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1 General information about the Caleo

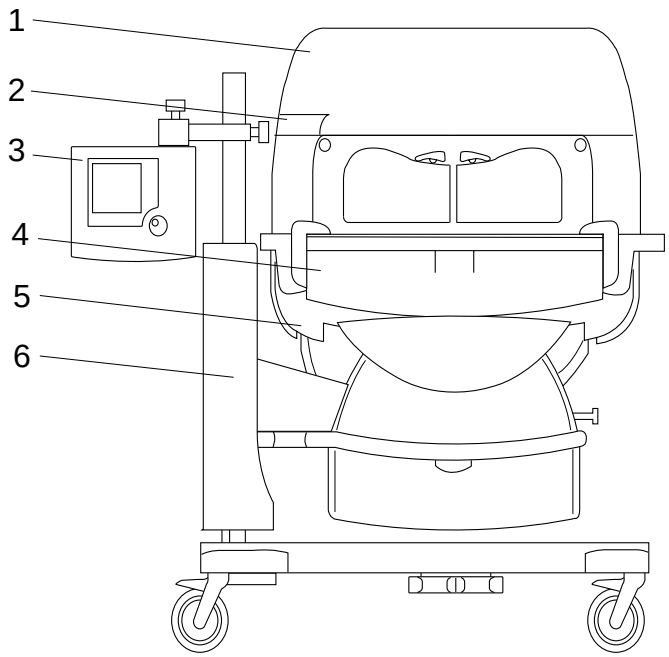

Fig. 1 Front view of the Caleo

Key

1 Canopy

2 Sensor unit

3 Display housing

4 Basic housing

5 Aggregate housing

6 Trolley

- non-adjustable trolley
- electrically adjustable trolley (optional)

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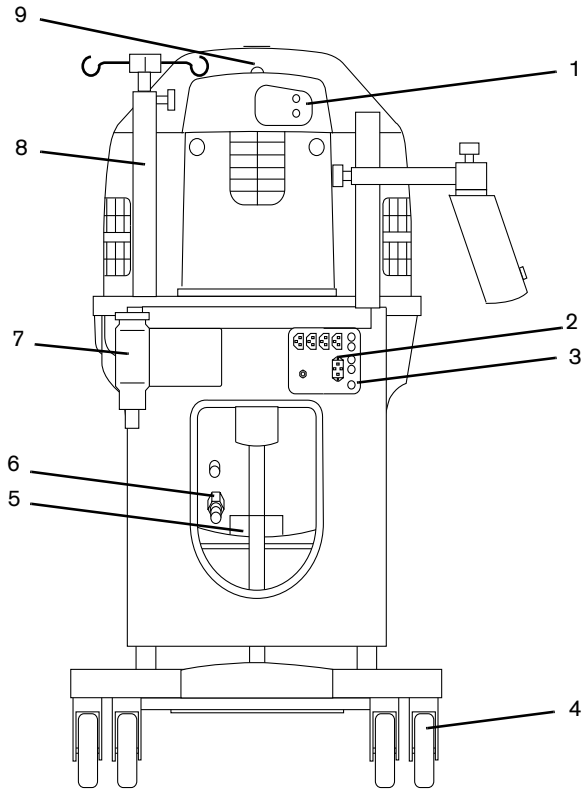

Fig. 2 Side view of Caleo

Key

1	Sensor unit, temperature connections
2	Mains connection
3	ON/OFF switch
4	Castors
5	Fresh-air filter
6	Connection (O2 control)
7	Water container
8	Telescopic iv pole
9	Central alarm indicator

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2 Canopy, flaps, column elements

2.1 Canopy

2.1.1 General information about the canopy

In case of repair, replace the complete canopy. If a new canopy needs to be installed, attach the country-specific label "Never leave baby unattended when doors are open" warning label ("Doors open" warning label) to the front of the new canopy. The "Doors open" warning label is part of the country-specific label sets (Note: See "Spare Parts List" for more information on label sets).

The canopy is made of plexiglass.

1. Attach warning label to specified area, see Fig. 3.

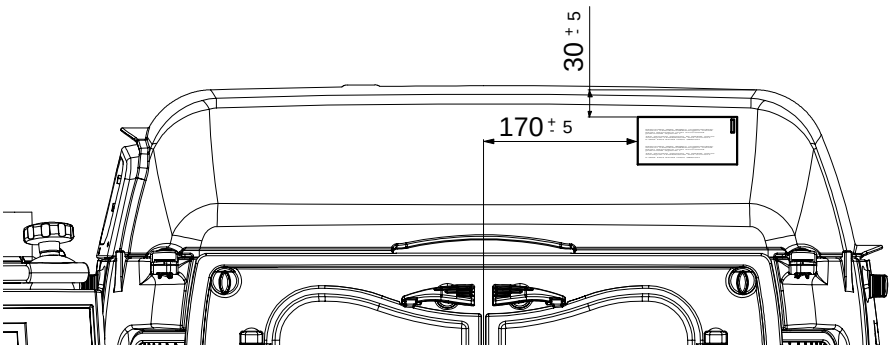

Fig. 3 View of the canopy front with "Doors open" warning label

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2.1.2 Removing the canopy

2. Hold canopy at both lateral recessed grips, lift carefully, and place on a stable soft surface.

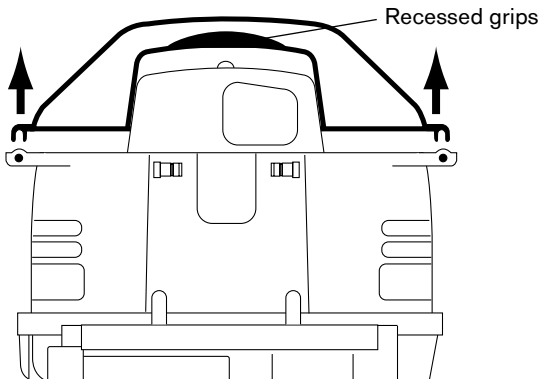

Fig. 4 Side view of Caleo

2.1.3 Mounting the canopy

1. Hold canopy at both recessed grips and carefully place it vertically onto the column elements.

The guide pins should glide into the recesses on the column elements.

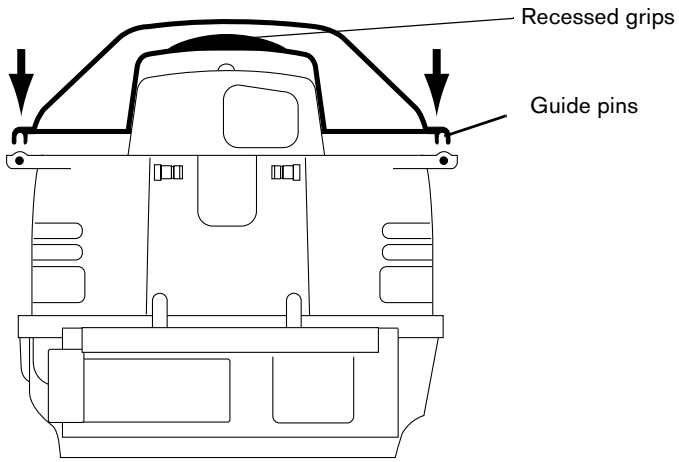

Fig. 5 Side view of Caleo

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2.1.4 Guide and cap assembly

In case of repair, replace the complete guide an cap assembly.

Replacing the guide and cap assembly

1. Place the canopy on a stable, non-scratching, surface.
2. Remove screws (a).
3. Dispose of faulty guide and cap assembly according to local waste disposal regulations.

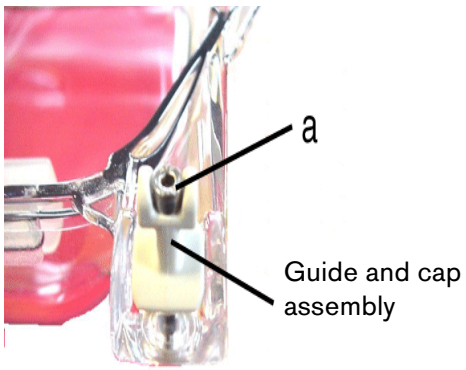

Fig. 6 View of one guide and cap assembly

4. Secure new guide and cap assembly with screw (a) using the preferred mounting position of the guide and cap assembly, see Fig. 6 (Note: The tightening torque of the screw is 1.5 -0.5 Nm!).

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2.1.5 Double wall (optional)

Removing the double wall

1. Hold canopy at both lateral recessed grips, lift carefully, and place on a stable soft surface.
2. Slightly compress double wall at point (a) and disengage from canopy holders at elongated holes (b).

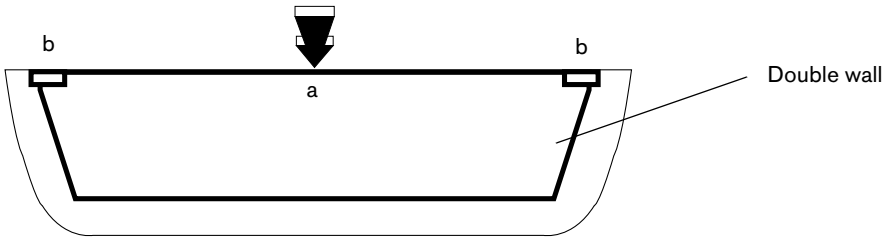

Fig. 7 Canopy

Mounting the double wall into the canopy

1. Turn canopy upside down and place on a soft, stable surface.
2. Place double wall into canopy.
3. Insert double wall into holders (b) on one long side of the canopy.
4. Slightly compress double wall and insert into holders on opposite side of canopy.

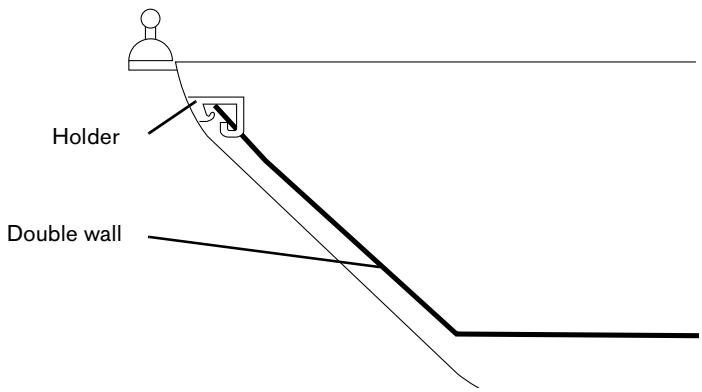

Fig. 8 Sectional view of canopy

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2.2 Doors

2.2.1 General information about the large doors

The large door comprises the hand ports, levers, latches, large seal, and hinges.

In case of repair, replace the complete large door. If the large door needs to be replaced, attach the country specific labels "Drawer" and "Warm air" to the front of the new large door. The labels "Drawer" and "Warm air" are part of a country-specific label set (Note: See "Spare Parts List" for more information on label sets).

Replacing the large door

1. Open latches of faulty large door and fold large door down.
2. Hold faulty large door and loosen screws (1) until retaining clips are slackened such that door can be disengaged from holders.

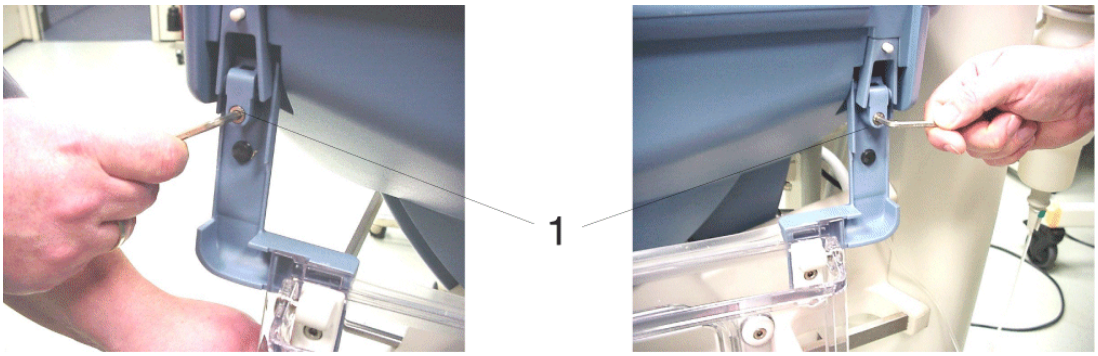

Fig. 9 Left and right side view of the large door

3. Dispose of faulty large door according to local waste disposal regulations.
4. Secure new large door to holders using screws (1), see Figure above **(Note: The tightening torque of the screws is 2.5 +0.5 Nm!)**.
5. Fold large door up and close using latches.

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6. Attach label "Drawer" to the front of the large doors, see Fig. 10.

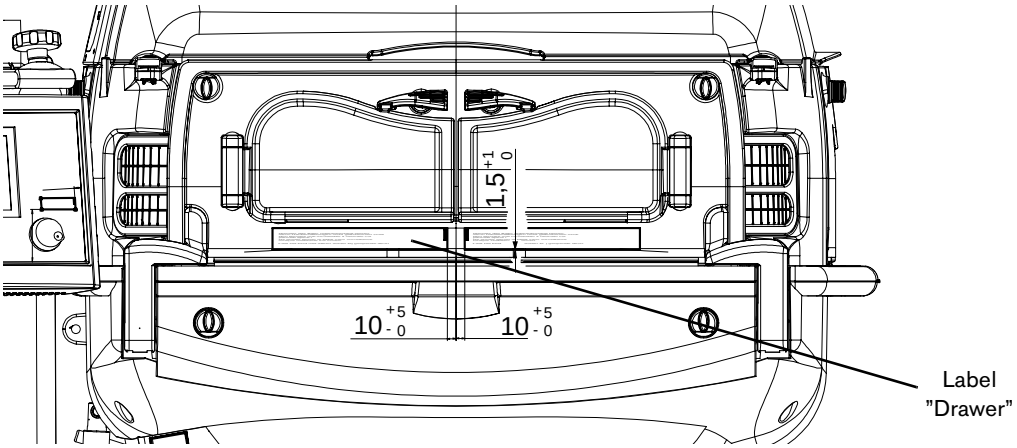

Fig. 10 Front view of Caleo, label "Drawer"

7. Attach label "Warm air" to the front of the large doors, see Fig. 11.

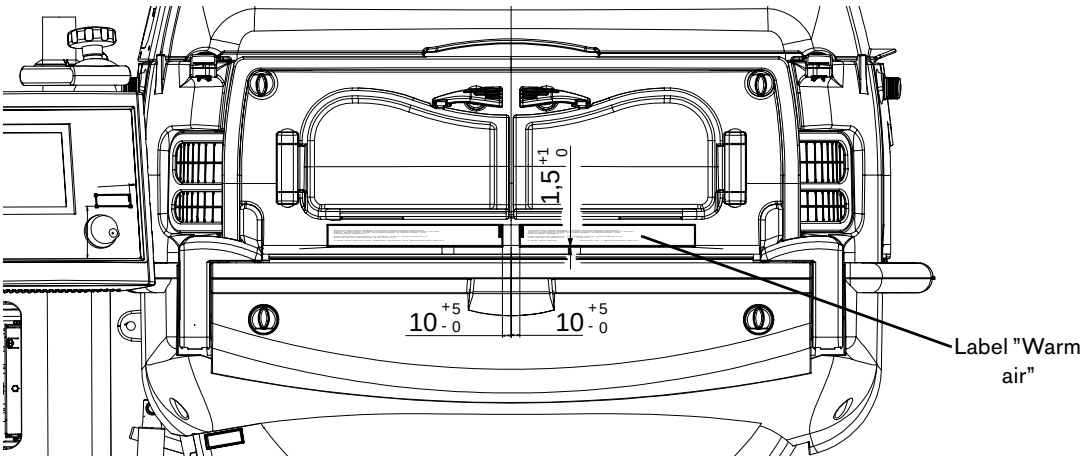

Fig. 11 Front view of Caleo, label "Warm air"

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Hand ports

Replace complete hand port if damaged (hand port window cracked, hinge faulty, etc.).

Replacing the hand port

1. Swing canopy support open and place canopy onto support.
2. Open faulty hand port.
3. Hold faulty hand port and remove screws and plastic washers (a).
4. Dispose of faulty hand port according to local waste disposal regulations.
5. Mount new hand port using screws and plastic washers (a) **(Note: Make sure plastic washers are centered in order to avoid jamming of hand ports; tightening torque of screws is 2 –0.5 Nm!)**.

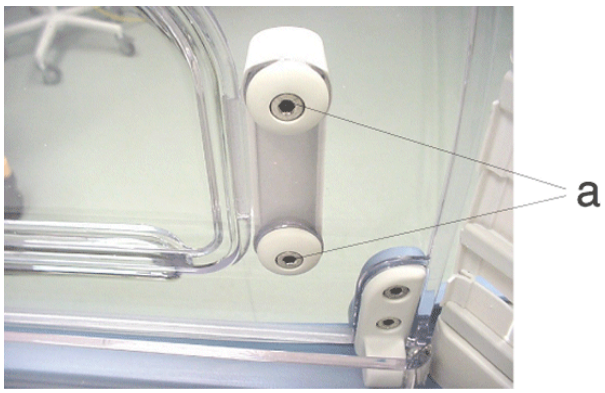

Fig. 12 Mounting the hand ports

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Lever

In case of repair, replace lever.

Replacing the lever

1. Swing canopy support open and place canopy onto support.
2. Hold lever and remove screw and plastic washer (a).
3. Dispose of faulty lever according to local waste disposal regulations.

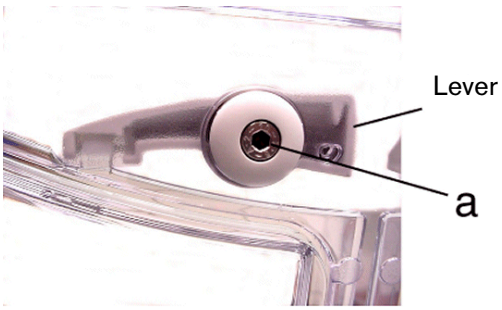

Fig. 13 Securing the lever

4. Make sure that locking spring (b) is in the correct fitting position.
5. Mount new lever using screw and plastic washer (a) **(Note: The tightening torque of the screw is 2 -0.5 Nm!)**.

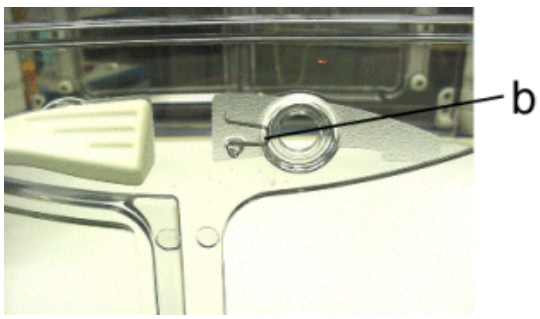

Fig. 14 Locking spring

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Latch

Replace latches if latch pin is broken or secure locking of doors is no longer possible.

Replacing the latch

1. Swing canopy support open and place canopy onto support.
2. Carefully remove screw (a) to avoid losing washer.
3. Remove faulty latch and dispose of according to local waste disposal regulations.

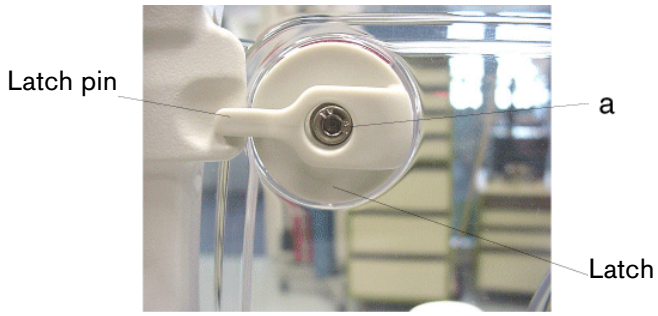

Fig. 15 Latch

4. Fit washer (b) onto thread of screw (a) and secure new latch with screw (a) using correct fitting position **(Notes: The tightening torque of screw (a) is 1 +0.5 Nm; red lock mark on front of latch must be visible when front door is open; turn-lock must move smoothly; tighten up screw a little if turn-lock has too much play!)** .

Fig. 16 Mounting the latch

Seal (large)

Replace large seal with new one if sticky, brittle, or torn.

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Replacing the seal (large)

1. Open latches on right and left sides of large door and fold large door down.
2. Pull out faulty large seal at guide groove and dispose of according to local waste disposal regulations.
3. Push new large seal (1) into guide groove of large door according to preferred fitting position **(Note: Stretch seal such that large door is sealed completely!)**, see Fig. 17

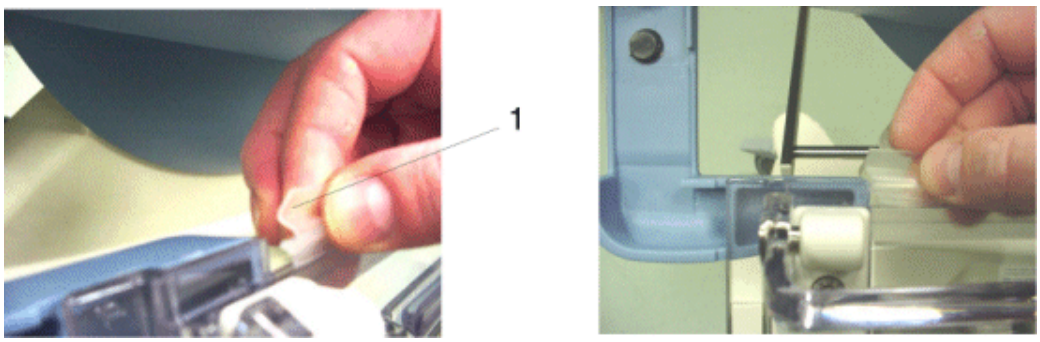

Fig. 17 Mounting the large seal

4. Fold large door up and close using latches.

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Hinges

- Replace hinges if damaged (hinge or retaining clip broken).

Replacing the hinges

1. Open latches of large door and fold large door down.
2. Hold large door and loosen screws (1) until retaining clips are slackened such that door can be disengaged from holders, see Fig. 18.

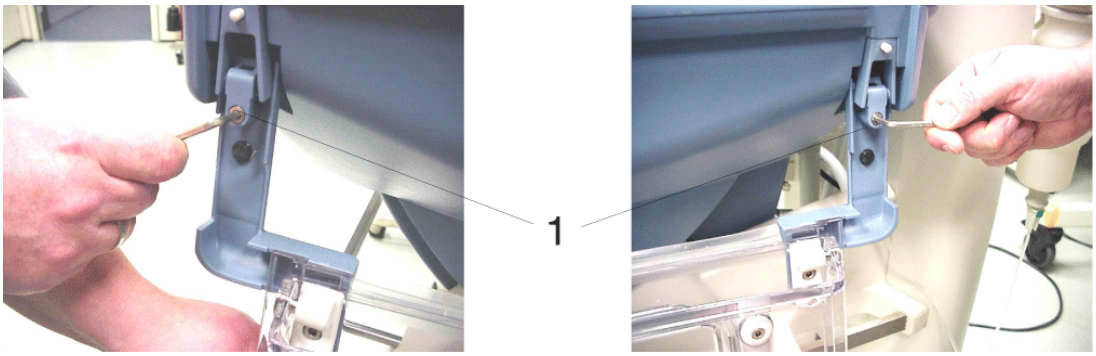

Fig. 18 Left and right side view of the large door

3. Place large door on stable and soft surface.
4. Remove screws (1) of faulty hinge, see Fig. 19.

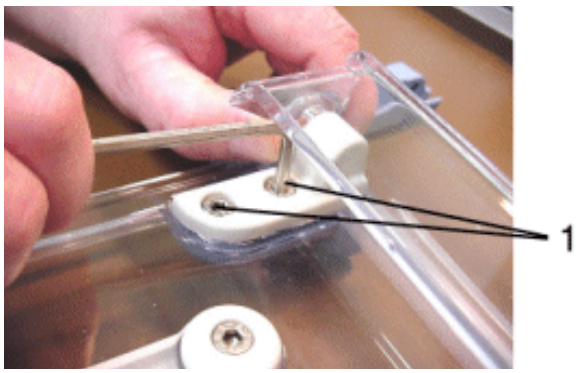

Fig. 19 Attachment of hinge to large door

5. Dispose of faulty hinge according to local waste disposal regulations.
6. Secure new hinge to large door using screws (1) **(Note: The tightening torque of the screws is 2 -0.5 Nm!)**, see Fig. 19.

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7. Secure large door to holders of Caleo using screws (1) **(Note: The tightening torque of the screws is 2.5 +0.5 Nm!)**, see Fig. 20.

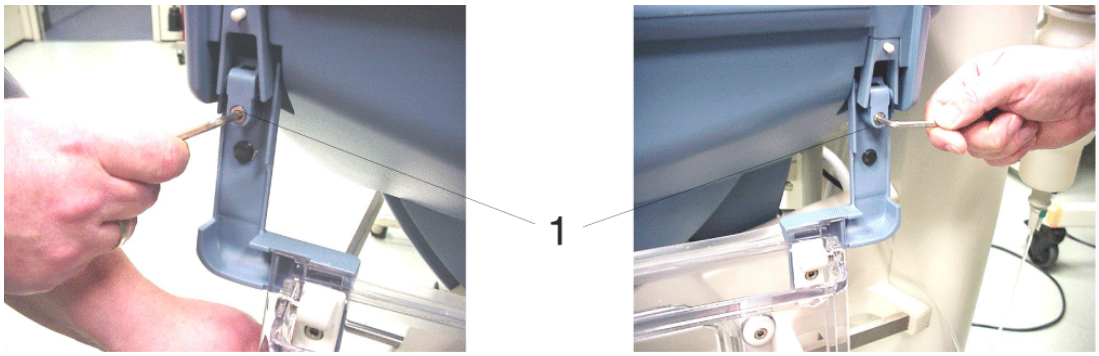

Fig. 20 Attachment of large door

8. Fold large door up and close using latches.

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2.2.2 Door (small)

In case of repair (fissures, cracks, or other type of damage) replace the complete small door (Note: Mount levers and latches of faulty small door onto new small door).

Replacing the door (small)

1. Open latches of small door and fold small door down.
2. Hold small door and loosen screws (1) until retaining clips are slackened such that door can be disengaged from holders, see Fig. 21.

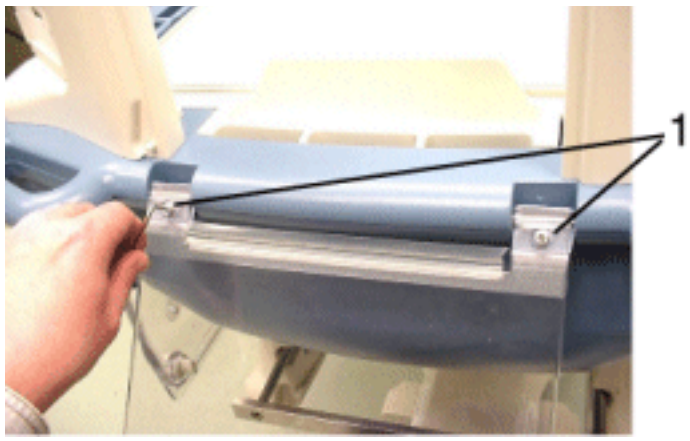

Fig. 21 Left and right side view of the small door

3. Dispose of small door according to local waste disposal regulations.
4. Secure new small door to holders of Caleo using screws (1), see Figure above **(Note: The tightening torque of the screws is 2 +0.5 Nm!)**, see Fig. 21.
5. Fold small door up and close using latches.

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Replacing the seal (small)

1. Open latches of small door and fold small door down.
2. Pull out faulty large seal at guide groove.
3. Push new small seal (a) into guide groove of small door according to preferred fitting position **(Note: Stretch seal such that small door is sealed completely!)**.

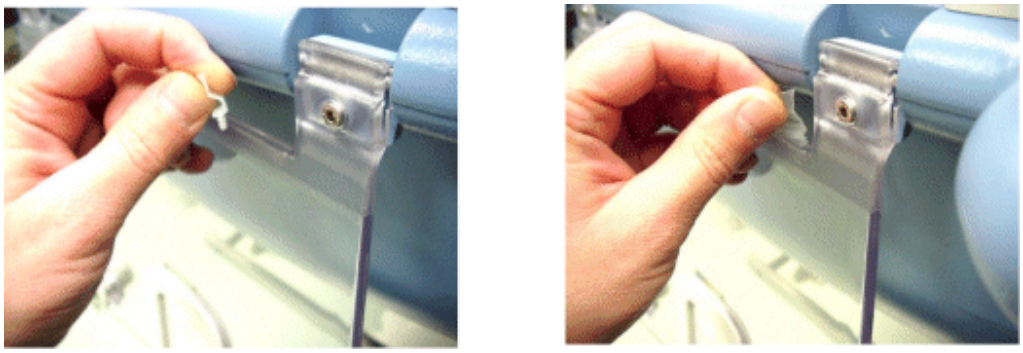

Fig. 22 Mounting the small seal

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2.3 Column elements

2.3.1 Removing the column elements from the basic housing

1. Open latches of large and small doors and swing doors down.
2. Hold column element and remove screw (1).

Fig. 23 Bottom view of the basic housing

2.3.2 Mounting the column elements onto the basic housing

1. Secure column element to basic housing using screw (1), see Figure above (Note: The tightening torque of the screw is 4 ±0.5 Nm!).
2. Fold small and large doors up and close using latches.

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2.3.3 Grommets/tubing ports

General information about grommets/tubing ports

Replace grommets/tubing ports if brittle or sticky, or segments are missing.

Replacing grommets/tubing ports

1. Push faulty grommets/tubing ports out of canopy or side doors in direction of opening and replace them with new ones.

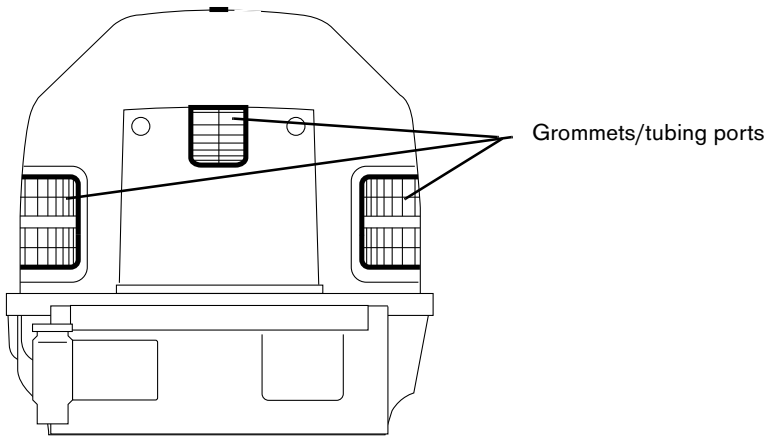

Fig. 24 Side view of the Caleo

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3 Sensor unit

3.1 General information about the sensor unit

If plastic parts of the sensor unit have been damaged, order the "Cover" kit. This kit contains all plastic parts of the sensor unit.

If the plastic part to which the label "Climatic sensor" is attached needs to be replaced, attach the country-specific label "Climatic sensor" to the specified spot on the new plastic part. The "Climatic sensor" label is part of the country-specific label sets (Note: See "Spare Parts List" for more information on label sets).

If the plastic part to which the label "Skin-temperature sensor" is attached needs to be replaced, attach the country-specific label "Skin-temperature sensor" to the provided recess on the new plastic part. The label "Skin-temperature sensor" must be ordered separately, see "Spare Parts List".

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3.2 General information about the sensor unit

The sensor unit contains the following subassemblies:

- WT2 Sensor PCB
- Integrated O2 Monitor PCB (optional)
- Humidity sensor (optional)
- Oxygen sensors for oxygen regulation (optional)

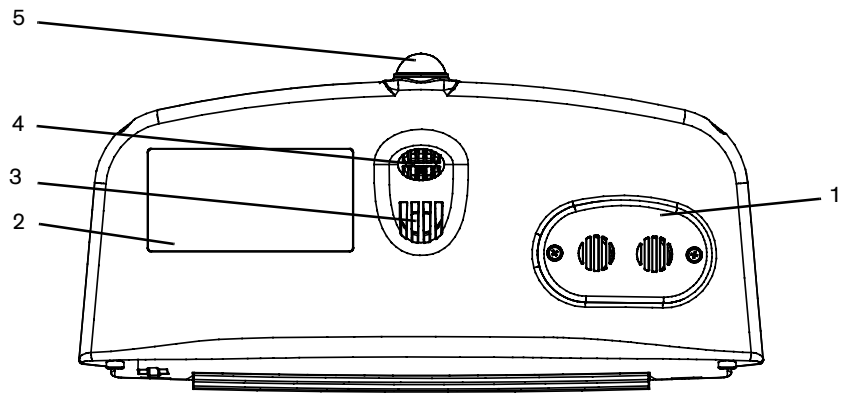

Fig. 25 View of the sensor unit

Key

1	O2 sensors (optional)
2	Label "Climatic sensor"
3	Humidity sensor (optional)
4	Air-temperature sensor
5	Alarm light

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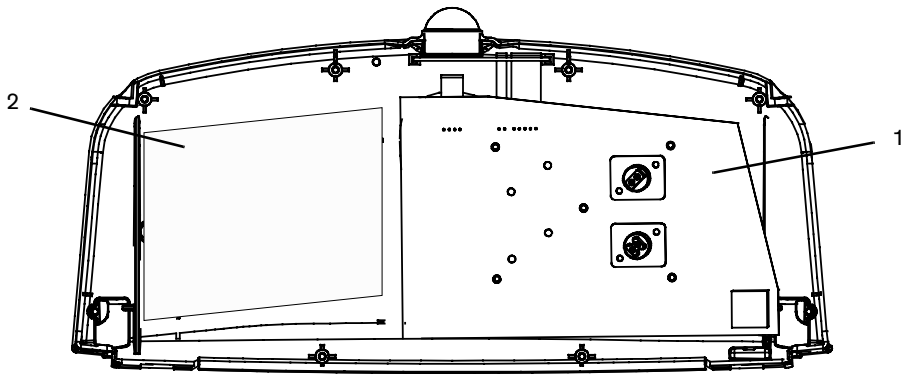

Fig. 26 Rear view of the sensor unit (open)

Key

1 WT2 Sensor PCB

2 Integrated O2 Monitor PCB (optional)

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3.3 Removing the sensor unit from the basic housing

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Vertically lift off canopy from Caleo and place it aside.

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

4. Create ESD conditions.
5. Carefully lift sensor unit (1) a little and, while holding it in this position, loosen screws (2) until sensor unit disengages from column elements.

Fig. 27 Sensor unit

6. While pushing cable connector latch in using a hex socket screwdriver, remove sensor unit connector (1) from sensor housing.

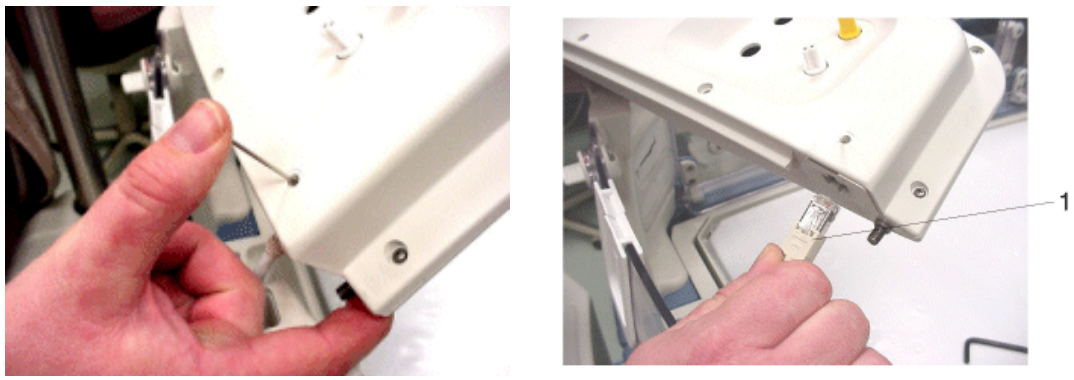

Fig. 28 Rear view of the sensor unit

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3.4 Mounting the sensor unit onto the basic housing

1. Turn sensor unit connector (1) in the correct fitting position and push connector into sensor unit until connector latch engages.

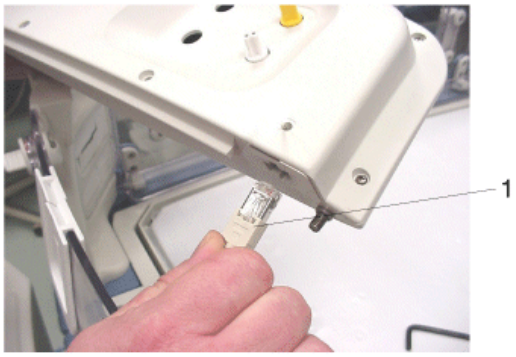

Fig. 29 Rear view of the sensor unit

2. Secure sensor unit (1) to basic unit using screws (2) (Note: The tightening torque of the screws is 4 ±0.5 Nm!).

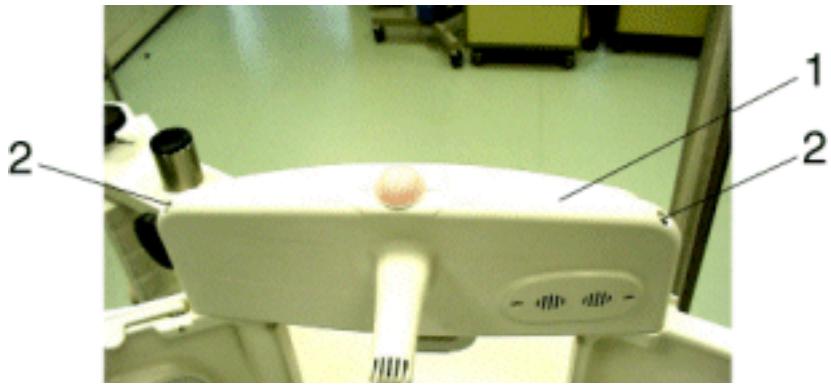

Fig. 30 Sensor unit

3. Lower canopy vertically onto the Caleo.
4. Plug power plug of Caleo into mains socket.
5. Switch on Caleo at ON/OFF switch.
6. Check Caleo with Test Certificate, see sections "Electrical safety" and "Functional tests (optical alarm LED, air-temperature measurement, oxygen measurement (optional), oxygen regulation (optional), humidity (optional), skin-temperature control (optional), thermomonitoring (optional)".
7. Switch off Caleo at ON/OFF switch.

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3.5 Opening the sensor unit

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

1. Create ESD conditions.
2. Remove the screws (1).

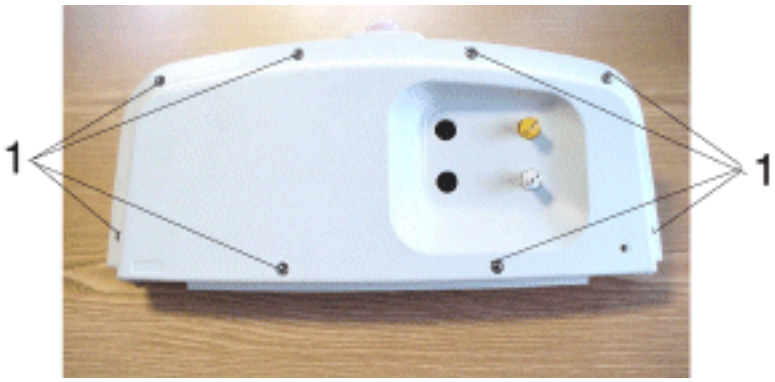

Fig. 31 Rear view of the sensor unit

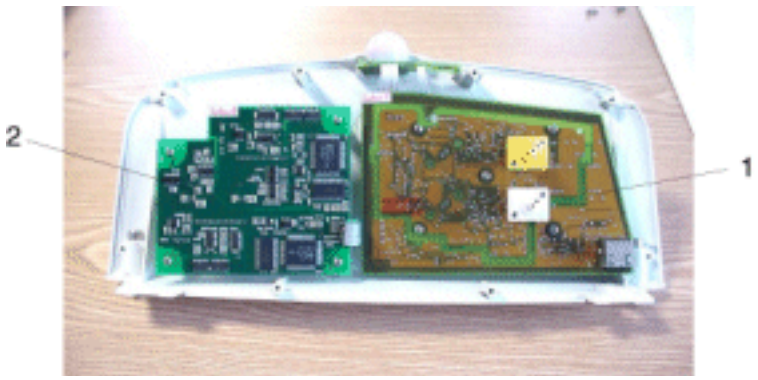

Fig. 32 View of open sensor unit

Key

1	WT2 Sensor PCB
2	Integrated O2 Monitor PCB (optional)

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3.6 Closing the sensor unit

1. Secure rear panel to sensor unit using screws (1).

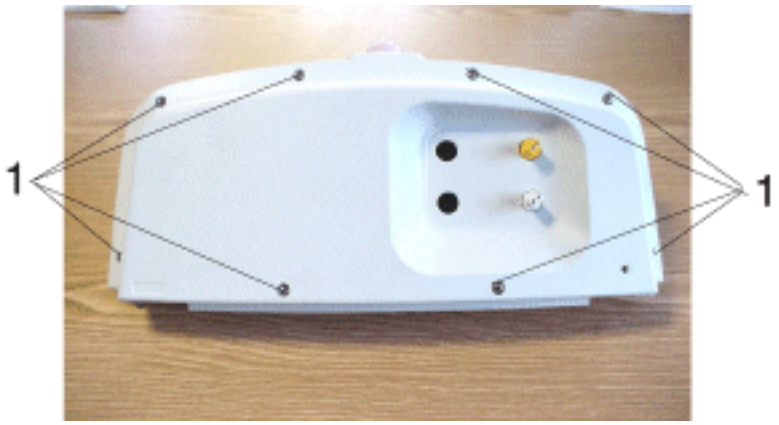

Fig. 33 Rear view of the sensor unit

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3.7 Integrated O2 Monitor PCB (optional)

3.7.1 General information about the Integrated O2 Monitor PCB

In case of repair, replace complete Integrated O2 Monitor PCB.

3.7.2 Testing the Integrated O2 Monitor PCB during operation

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.

The EL display shows the actual value and the set value of the oxygen concentration.

3. Switch off Caleo at ON/OFF switch.

3.7.3 Testing the Integrated O2 Monitor PCB using the DrägerService mode

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Call up test step "Information" in DrägerService mode.
4. Select menu item "O2 sensors" from test step "Information".

The EL display shows the following data:

- Manufacturing date
- Last and next calibration
- Oxygen concentration at 21 vol.% O2

5. Switch off Caleo at ON/OFF switch.

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3.7.4 Replacing the Integrated O2 Monitor PCB

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Vertically lift off canopy from Caleo and place it aside.
4. Dismount sensor unit from basic unit, see section "3.3".

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

5. Create ESD conditions.
6. Open sensor unit, see section "3.5".
7. Remove cable connector, see the following Figure.
8. Remove screws (a) and Integrated O2 Monitor PCB.

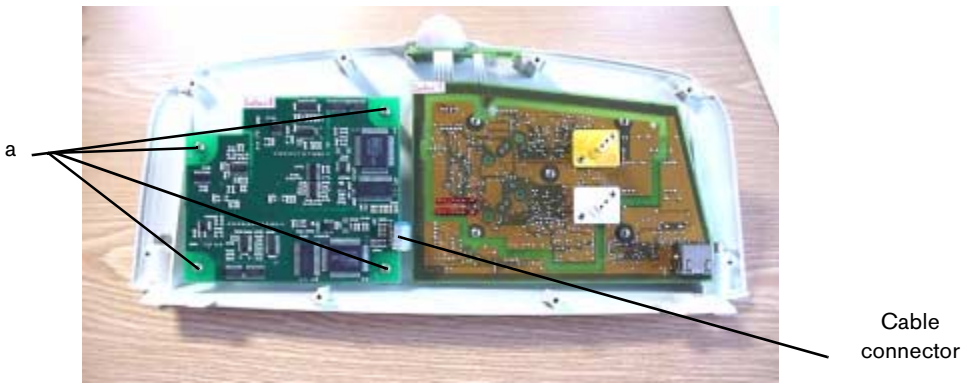

Fig. 34 View of the sensor unit

9. Remove O2 sensors from dismounted Integrated O2 Monitor PCB and install on new Integrated O2 Monitor PCB.
10. Secure new Integrated O2 Monitor PCB to sensor unit using screws (a), see Figure above.
11. Connect cable connector, see Figure above.
12. Close sensor unit, see section "3.6".
13. Close sensor unit, see section "3.4".
14. Mount canopy onto column elements of Caleo.

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3.8 WT2 Sensor PCB

The WT2 Sensor PCB has the following subassemblies:

- WT2 Sensor PCB
- Alarm PCB
- Air-temperature sensor
- Humidity sensor (optional)

3.8.1 General information about the WT2 Sensor PCB

In case of repair, replace complete WT2 Sensor PCB.

If WT2 Sensor PCB needs to be replaced, humidity sensor (optional) must be removed and mounted onto new WT2 Sensor PCB.

3.8.2 Checking the WT2 Sensor PCB using DrägerService mode

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Call up test step "Diagnosis" in DrägerService mode.
4. Select menu item "WT2 Sensor PCB" from test step "Diagnosis".

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3.8.3 Replacing the WT2 Sensor PCB

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Vertically lift off canopy from Caleo and place it aside.
4. Dismount sensor unit from basic unit, see section "3.3".

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

5. Create ESD conditions.
6. Open sensor unit, see section "3.5".
7. Remove screws (a).
8. Push Alarm PCB (b) out of its mount.

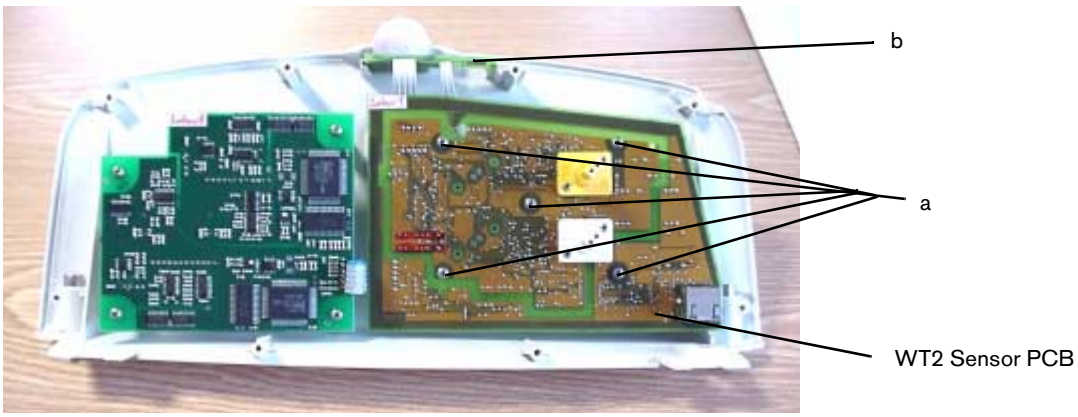

Fig. 35 View of open sensor unit

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9. Disconnect cable connector (1) from WT2 Sensor PCB.

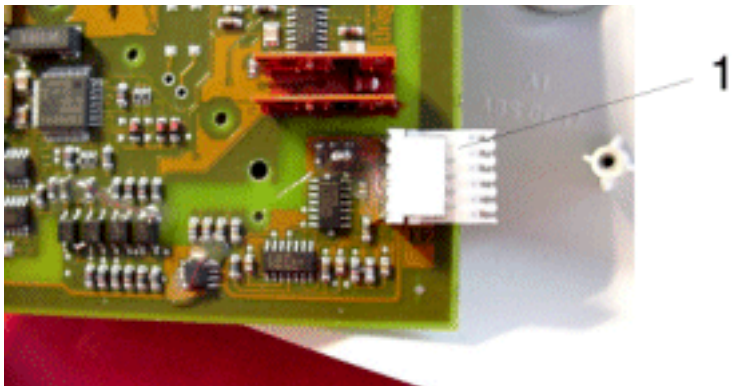

Fig. 36 Detail of the WT2 Sensor PCB, components side

10. Remove screws (1) and cover (2).
11. Remove humidity sensor (3) (optional) from socket.

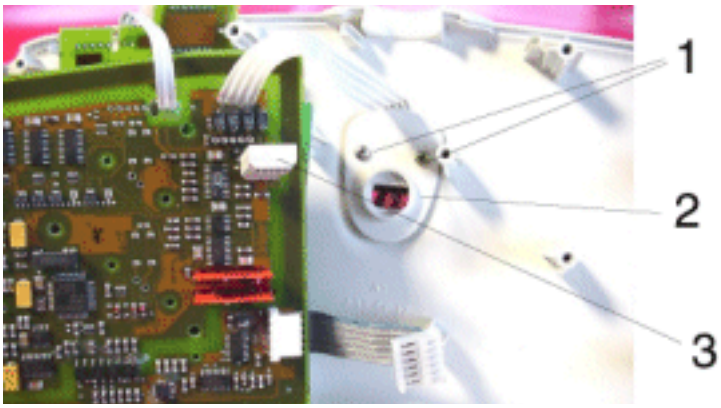

Fig. 37 View of the sensor unit

12. Remove faulty WT2 Sensor PCB and temperature sensors from sensor unit.
13. Dispose of faulty WT2 Sensor PCB according to local waste disposal regulations.
14. Push temperature sensors of WT2 Sensor PCB into sensor unit and secure cover (2) with screws (1), see Fig. 37 (Note: The tightening torque of the nuts is 0.5 +0.1 Nm!).

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15. Insert (optional) humidity sensor (1) with air inlets pointing downwards into socket of new WT2 Sensor PCB.

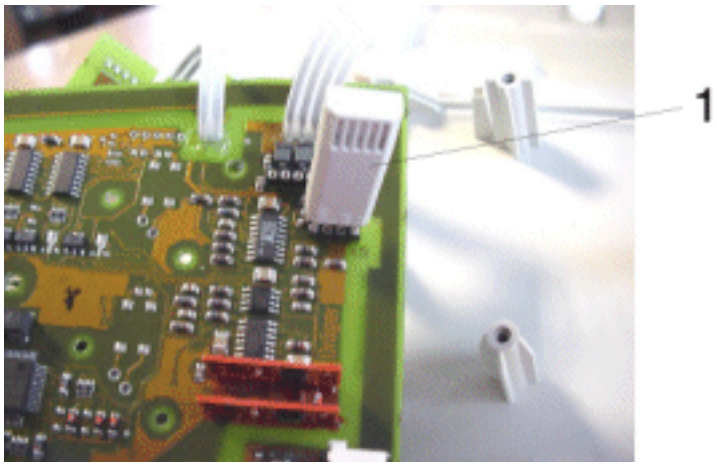

Fig. 38 Detail of the WT2 Sensor PCB, components side

16. Connect cable connector (1) to WT2 Sensor PCB.

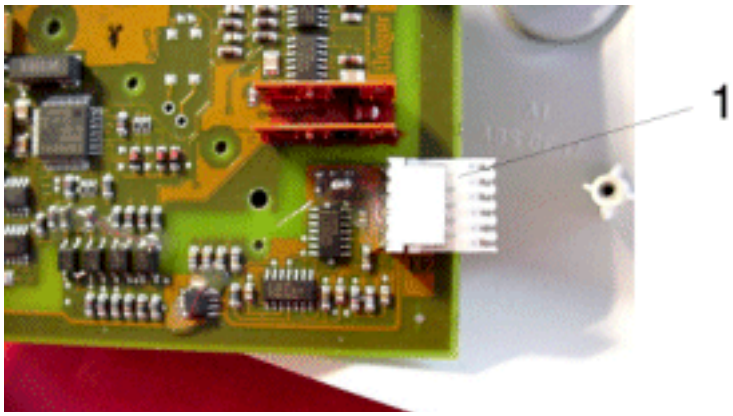

Fig. 39 Detail of the WT2 Sensor PCB, components side

17. Push Alarm PCB into fitting position.

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18. Secure new WT2 Sensor PCB to sensor unit with screws (h).

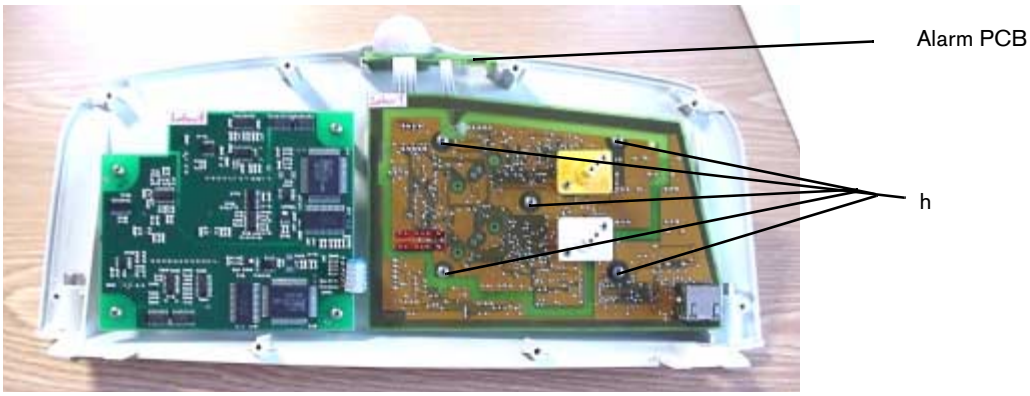

Fig. 40 View of open sensor unit

19. Close sensor unit, see section "3.6".
20. Mount sensor unit onto basic housing, see section "3.4".
21. Mount canopy onto column elements of Caleo.

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3.9 O2 sensors (optional)

3.9.1 General information about the O2 sensors

Replace O2 sensors in case of repair or at scheduled replacement intervals, at the latest (Note: Refer to Instructions for Use/Operating Instructions for O2 sensor replacement intervals).

Calibrate O_2 sensors after replacement.

3.9.2 Checking O2 sensors with DrägerService mode

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Call up test step "Information" in DrägerService mode.
4. Select menu item "O2 sensors" from test step "Information".

The EL display shows the following data:

- Manufacturing date
- Last and next calibration
- Oxygen concentration

5. Switch off Caleo at ON/OFF switch.

3.9.3 Checking the O2 sensors during operation

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Set oxygen target value to 40 vol.% O2.

The EL display shows the actual value of 40 vol.% O2 after approx. 1 minute.

4. Switch off Caleo at ON/OFF switch.
5. Pull power plug of Caleo out of mains socket.

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3.9.4 Replacing O2 sensors

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Vertically lift off canopy from Caleo and put it aside.
4. Remove screws (a).
5. Put cover aside.

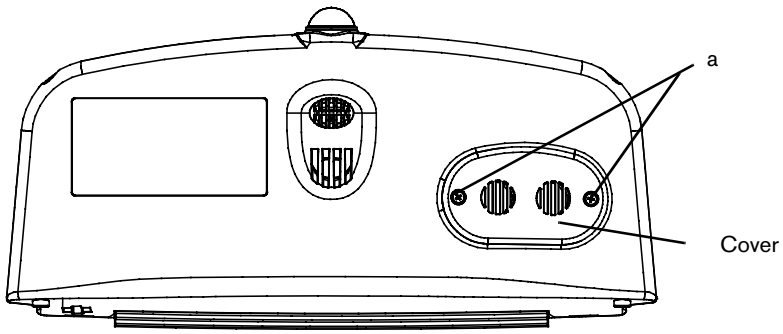

Fig. 41 View of the sensor unit

6. Remove O2 sensors (b) from sockets on PCB and dispose of according to local waste disposal regulations.
7. Check that O-ring (c) is installed evenly in the groove, see the following Figure.

If the O-ring is not installed evenly in the groove, remove ring (d) from dome (e) and correct the seat of the O-ring. The push ring (d) onto the dome (e) again.

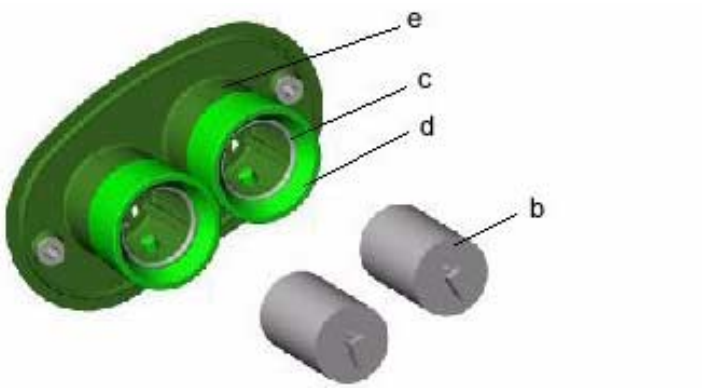

Fig. 42 O2 cover with O2 sensors

8. Check that the labels on the O2 sensors are flat, if necessary press the labels against the O2 sensors.

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9. Screw the O2 sensors into the dome as far as they will go (Note: If the O2 sensor are just pushed in, the O-rings will curl up resulting in incorrect oxygen measurements.).
10. Pay attention to the preferred position of the PCB plug-in contacts, and turn the O2 sensor connection contacts in the respective position.
11. Secure cover to sensor unit using screws (f).

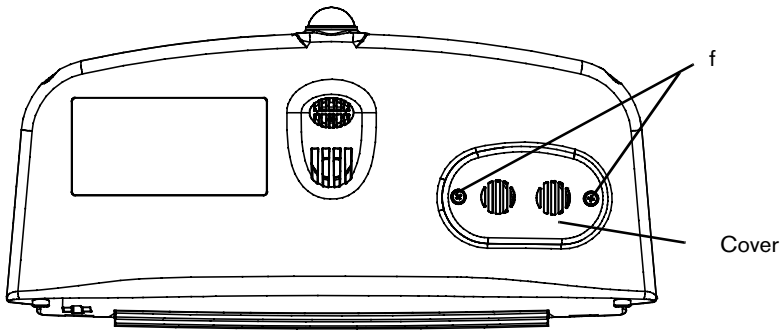

Fig. 43 View of the sensor unit

12. Lower canopy onto Caleo.
13. Plug power plug of Caleo into mains socket.
14. Switch on Caleo at ON/OFF switch.
15. Select menu item "Calibrations" from DrägerService mode.
16. Select menu "O2 sensors" from test step "Calibrations".
17. Calibrate O2 sensor.

After successful calibration, the EL display does not show an oxygen failure message.

18. Switch off Caleo at ON/OFF switch.
19. Pull power plug of Caleo out of mains socket.

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4 Display housing

4.1 General information about the display housing

The display housing (1) consists of the housing, the EL display, the WT2 Controller PCB, the membrane keypad, the WT2 Interface PCB (optional), the rotary transducer with control knob, and the loudspeaker.

Fig. 44 Display housing

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4.2 Display housing

4.2.1 Dismounting the display housing from the trolley

Carry out the following steps to repair the display housing:

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Remove screws and washers (1) and put cover (2) aside.

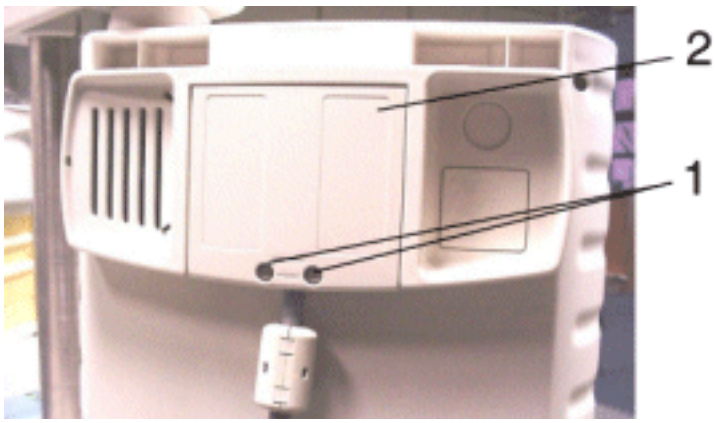

Fig. 45 Rear view of the display housing, removing screws

4. Pull cable connector (1) out of plug-in socket, see Fig. 46.

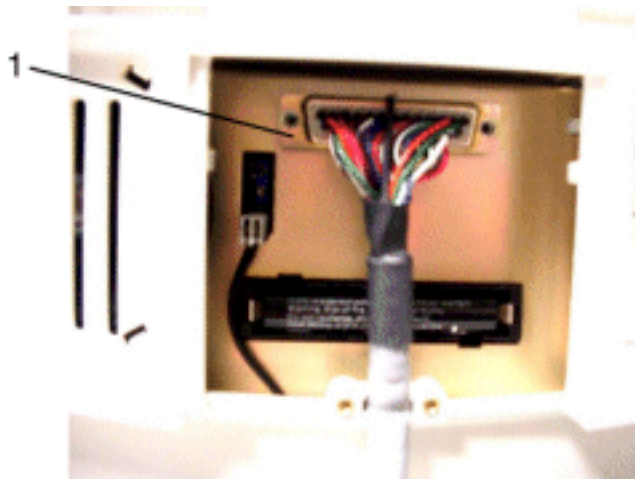

Fig. 46 Rear view of the display housing, disconnecting cable connections

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Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

5. Create ESD conditions.

Risk of personal injury and/or damage to equipment. The display housing will fall down after removing the screw of the support arm. To prevent the display housing from falling down, support it with the other hand while unscrewing the screw.

6. Support display housing with one hand, loosen screw (c) until display housing is no longer connected with screw (c), then place display housing on a stable surface.

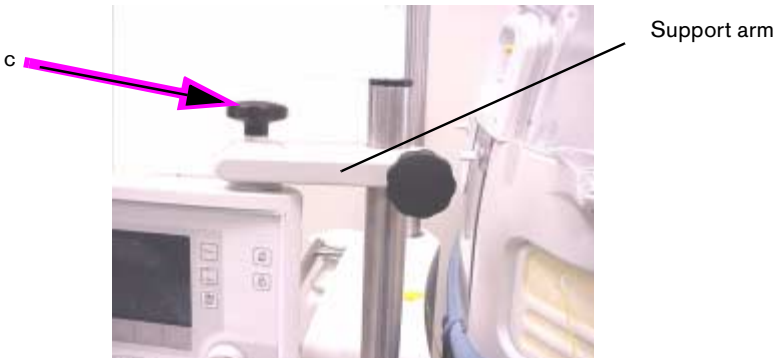

Fig. 47 Screw of support arm

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4.2.2 Mounting the display housing onto the trolley

1. Secure display housing to support arm using screw (Note: The intermediate element has guide lugs. When mounting display housing onto support arm, fit guide lugs of intermediate element into corresponding recesses on display housing).

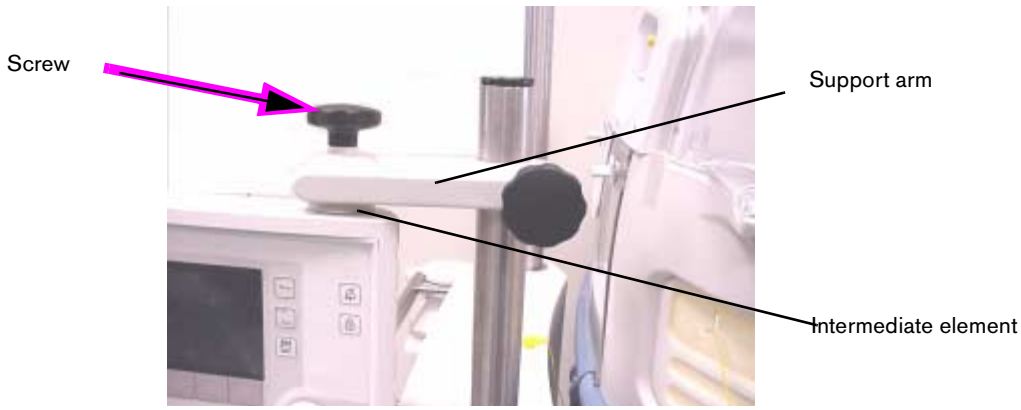

Fig. 48 View of the support arm screw

2. Plug cable connector (1) into plug-in connection on display housing.

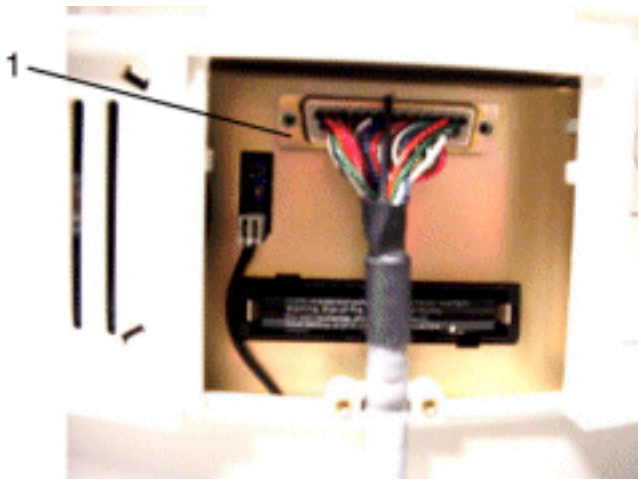

Fig. 49 Rear view of the display housing, connecting cable connector

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3. Secure cover (2) to display housing using screws and washers (1).

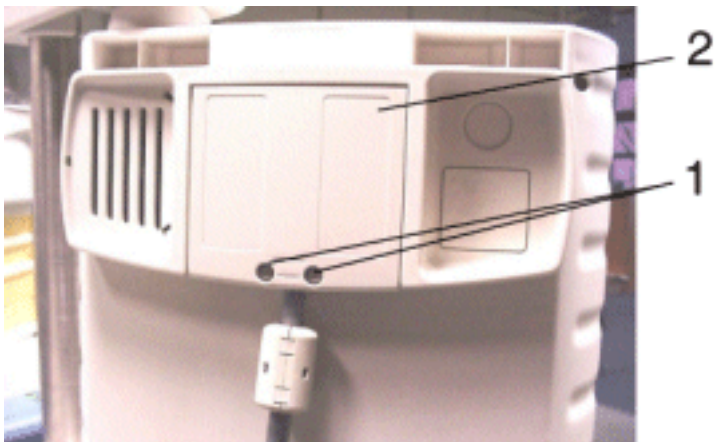

Fig. 50 Rear view of the display housing

4. Plug power plug of Caleo into mains socket.
5. Switch on Caleo at ON/OFF switch.
6. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
7. Switch off Caleo at ON/OFF switch.
8. Pull power plug of Caleo out of mains socket.

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4.3 Rear panel

4.3.1 Opening the rear panel of the display housing

1. Dismount display housing from trolley, see section "4.2.1".

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

2. Create ESD conditions.
3. Remove screws and washers (1), see Fig. 51.

Fig. 51 Rear view of the display housing, removing the rear panel

4. Lift rear panel slightly, disconnect loudspeaker connector, and put rear panel aside.

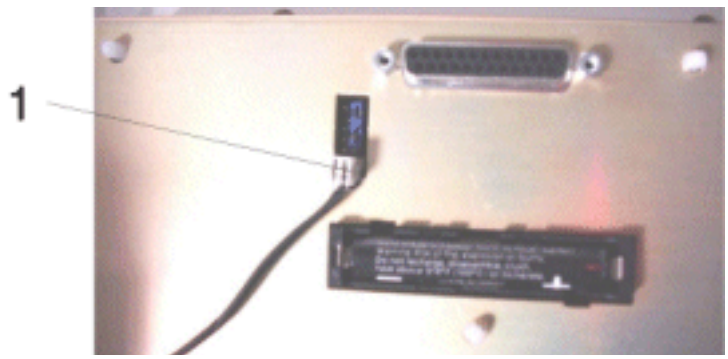

Fig. 52 View of open display housing

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4.3.2 Closing the rear panel of the display housing

1. Take rear panel and plug loudspeaker connector (1) onto plug-in socket on display housing (Note: Pay attention to locking position of loudspeaker connector!).

Fig. 53 View of open display housing

2. Secure rear panel of display housing using screws and washers (1), see Fig. 54.

Fig. 54 Rear view of the display housing

4.3.3 Replacing the display housing

1. Dismount display housing from trolley, see section "4.2.1".

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

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2. Create ESD conditions.
3. Remove screws and washers (1), see Fig. 55.

Fig. 55 Rear view of the display housing

4. Lift rear panel slightly and disconnect loudspeaker connector (1), see Fig. 56.

Fig. 56 View of open display housing

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5. Carefully push loudspeaker mount back a little and remove loudspeaker.
6. Dispose of faulty rear panel according to local waste disposal regulations.

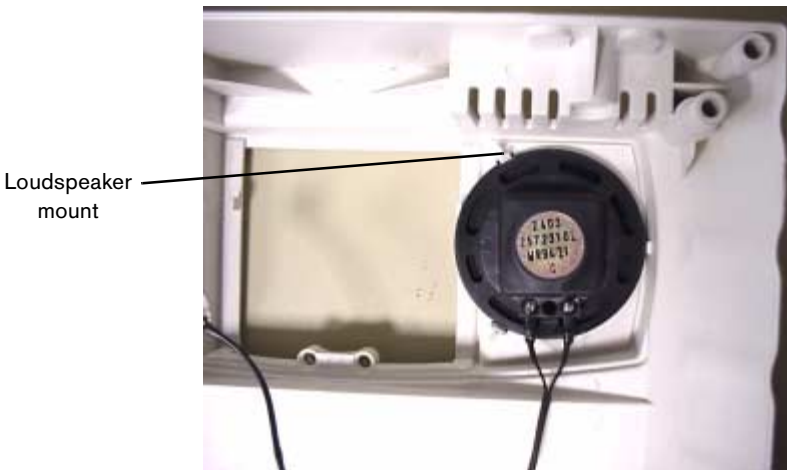

Fig. 57 Detail of the loudspeaker

7. Carefully push loudspeaker mount back a little and fit loudspeaker into loudspeaker mounts on new rear panel, see Fig. 57.
8. Plug loudspeaker connector (1) onto plug-in socket, see Fig. 58 (Note: Pay attention to locking position of loudspeaker connector!).

Fig. 58 View of open display housing

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9. Secure rear panel of display housing using screws and washers (1), see Fig. 59.

Fig. 59 Rear view of the display housing

10. Mount display housing onto trolley, see section "4.2.2".

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4.4 Electronic unit

4.4.1 Removing the electronic unit from the display housing

1. Dismount display housing from trolley, see section "4.2.1".

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

2. Create ESD conditions.
3. Remove screws and washers (1), see Fig. 60.

Fig. 60 View of the rear panel

4. Lift rear panel slightly, disconnect loudspeaker connector (1), and put rear panel aside, see Fig. 61.

Fig. 61 View of open display housing

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5. Push electronic module out of front frame.

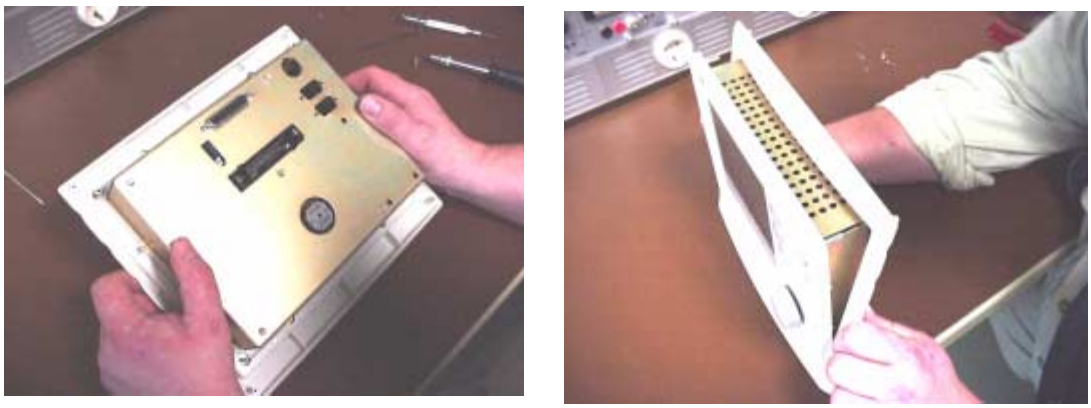

Fig. 62 Front frame

6. Remove sealing from electronic unit.

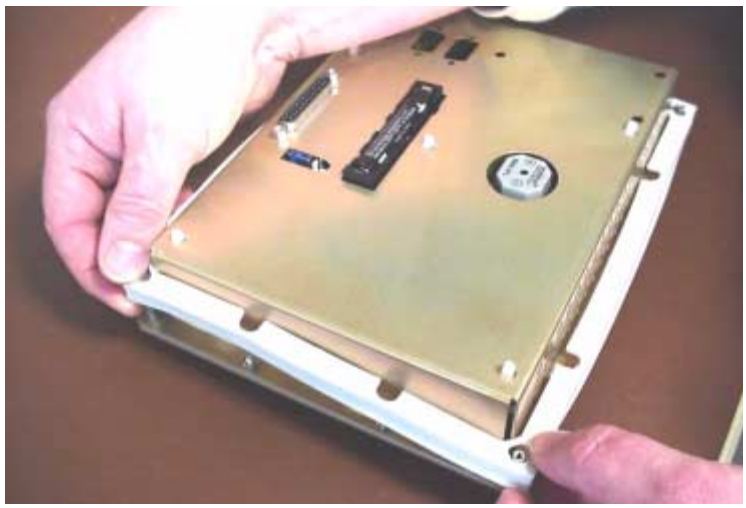

Fig. 63 Sealing

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4.4.2 Opening the electronic unit

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

7. Create ESD conditions.
8. Remove nuts and washers (a).

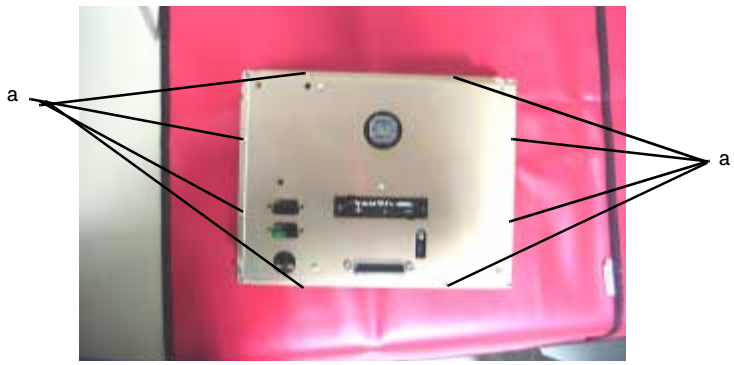

Fig. 64 Electronic unit

9. Lift cover and place front into grooves of cover, see Fig. 65.

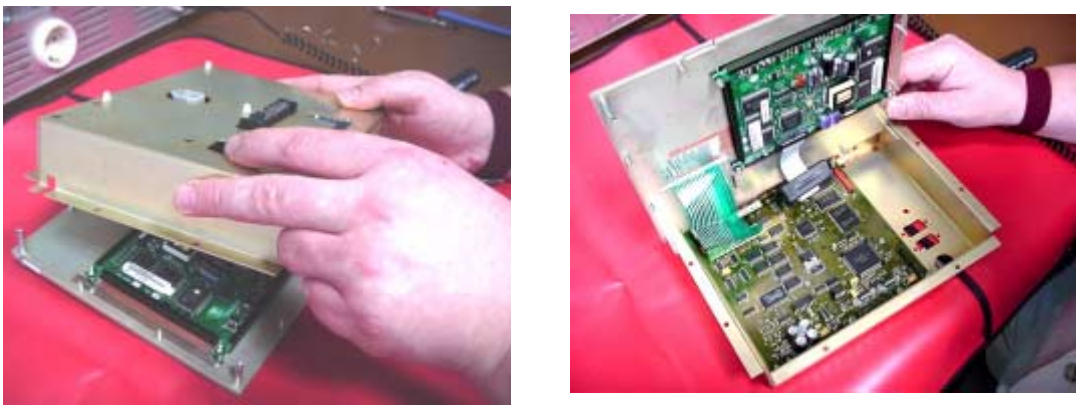

Fig. 65 View of open electronic unit

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4.4.3 Fitting the electronic unit into the display housing

1. Disengage cover from grooves and place it onto electronic unit.

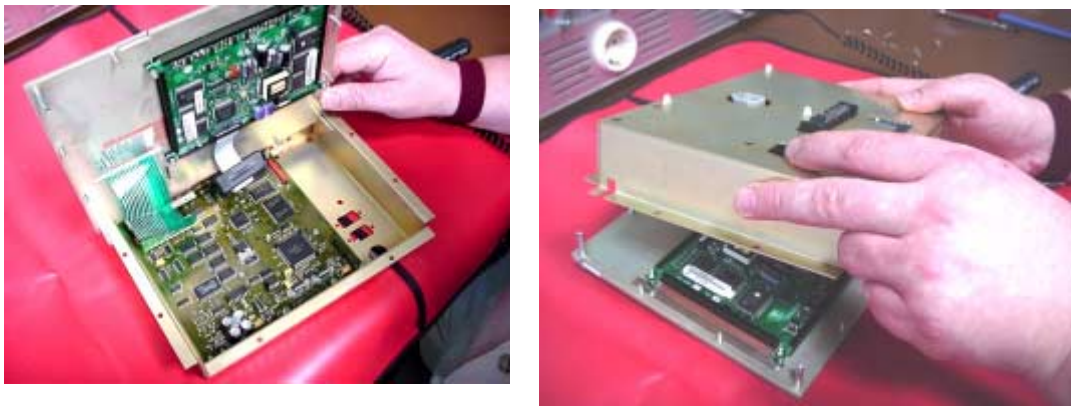

Fig. 66 View of open electronic unit

2. Secure cover using nuts and washers (a).

Fig. 67 Electronic unit

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3. Place sealing onto electronic unit (observe preferred fitting position).

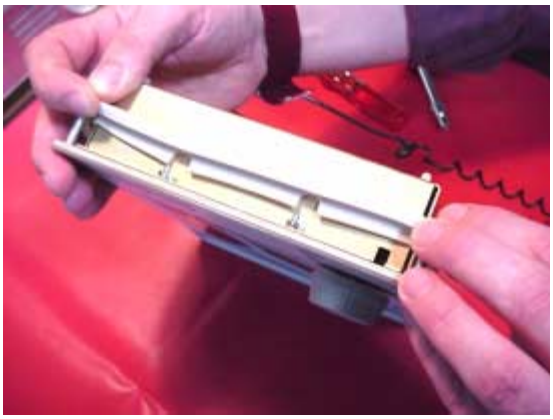

Fig. 68 Sealing

4. Press electronic unit into front frame from the front (Note: Make sure sealing is not twisted in the front frame, smooth out, if necessary.).

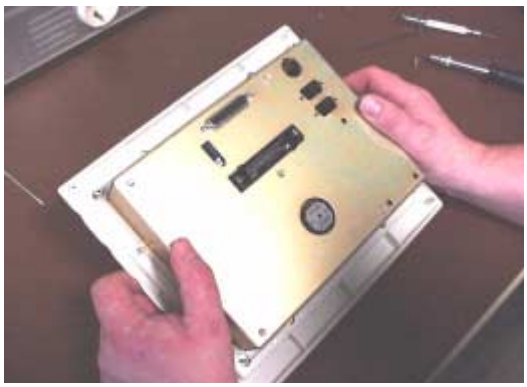

Fig. 69 Front frame

5. Close rear panel of display housing, see 4.3.2.
6. Mount display housing onto trolley, see "4.2.2".
7. Plug power plug of Caleo into mains socket.
8. Switch on Caleo at ON/OFF switch.
9. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
10. Switch off Caleo at ON/OFF switch.

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4.5 EL display

The EL display consists of the display and the control board.

In case of repair, replace complete EL display.

Fig. 70 EL display

4.5.1 Checking the EL display during normal operation

1. Assemble Caleo ready for use.
2. Plug power plug of Caleo into mains socket.
3. Switch on Caleo at ON/OFF switch.

All LEDs come on during the self-test. The EL display activates all pixels. The audible alarm sounds.

4. Switch off Caleo at ON/OFF switch.

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4.5.2 Replacing the EL display

1. Dismount display housing from trolley, see section "4.2.1".

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

2. Create ESD conditions.
3. Open display housing, see section "4.3.1".
4. Remove electronic unit from display housing, see 4.4.1.
5. Open electronic unit, see 4.4.2.
6. Disconnect flexible lead cable connector (1) from WT2 Controller PCB.

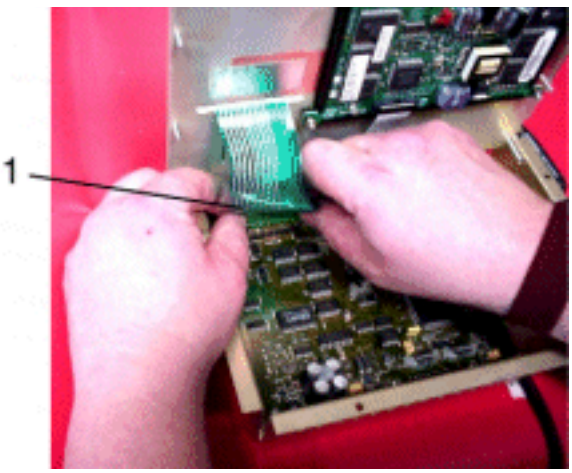

Fig. 71 View

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7. Disconnect cable connector from WT2 Controller PCB.

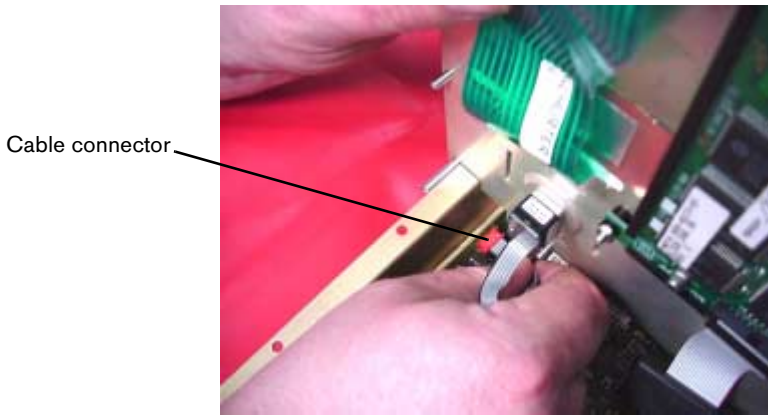

Fig. 72 Cable connector

8. Disconnect cable connector from EL display.

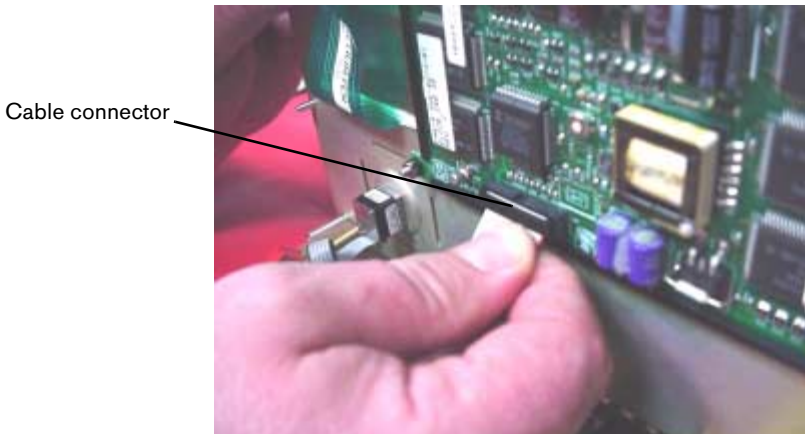

Fig. 73 Cable connector

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9. Remove nuts, washers and plastic washers (a), and take out EL display.

Fig. 74 Removing the EL display

10. Dispose of faulty EL display according to local waste disposal regulations.
11. Install new EL display using plastic washers, washers, and nuts (Note: Pay attention to different thickness of plastic washers and their correct fitting positions, see Fig. 75!).

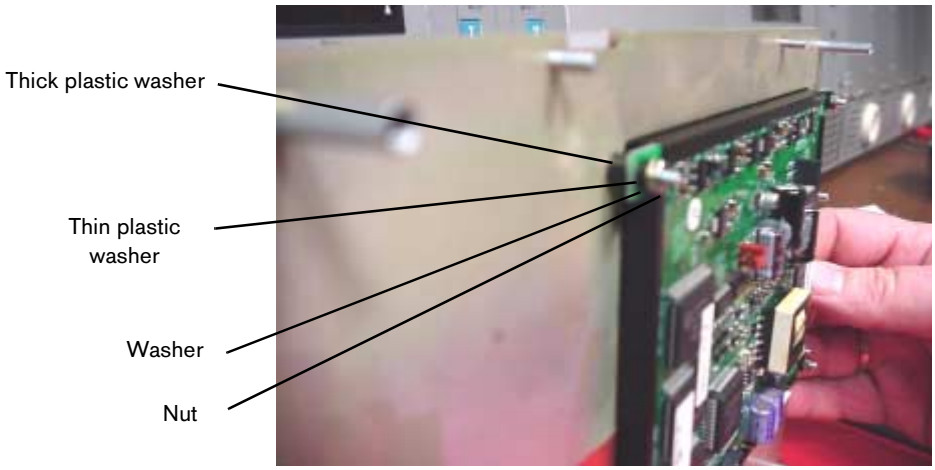

Fig. 75 EL display

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12. Plug rotary transducer cable connector onto the WT2 Controller PCB.

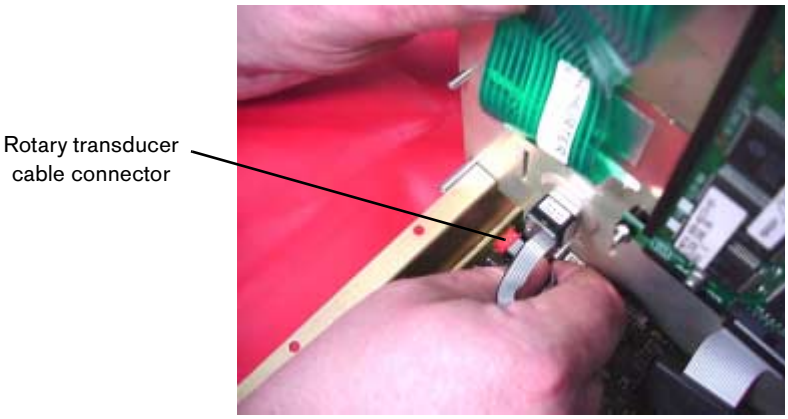

Fig. 76 Rotary transducer cable connector

13. Plug flexible lead cable connector (1) onto the WT2 Controller PCB.

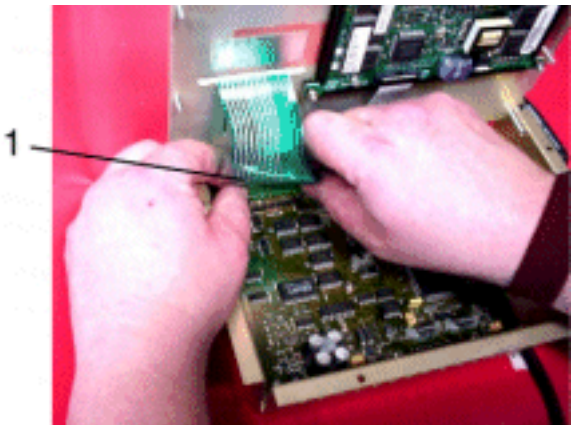

Fig. 77 Flexible lead cable connector

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14. Plug WT2 Controller PCB cable connector onto EL display.

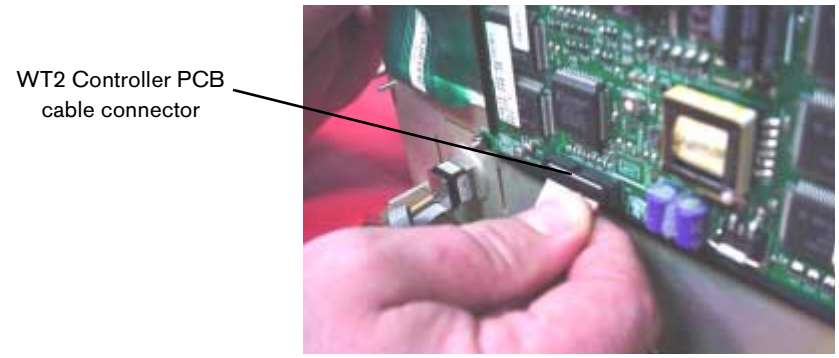

Fig. 78 WT2 Controller PCB cable connector

15. Fit electronic unit into display housing, see 4.4.3.
16. Close rear panel of display housing, see 4.3.2.
17. Mount display housing onto trolley, see "4.2.2".
18. Plug power plug of Caleo into mains socket.
19. Switch on Caleo at ON/OFF switch.
20. Check Caleo using Test Certificate, see Test Certificate sections "Electrical safety" and "Functional tests".
21. Switch off Caleo at ON/OFF switch.

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4.6 WT2 Controller PCB

4.6.1 General information about the WT2 Controller PCB

The WT2 Controller PCB holds a lithium battery which must be replaced at regular intervals (Note: Refer to Instructions for Use/Operating Instructions for lithium battery replacement intervals.).

When installing a new WT2 Controller PCB, remove lithium battery from faulty WT2 Controller PCB and install it on new WT2 Controller PCB.

The WT2 Controller PCB has three service LEDs.

Replace complete WT2 Controller PCB in case of repair; remove lithium battery and jumpers from faulty WT2 Controller PCB and install them on new WT2 Controller PCB.

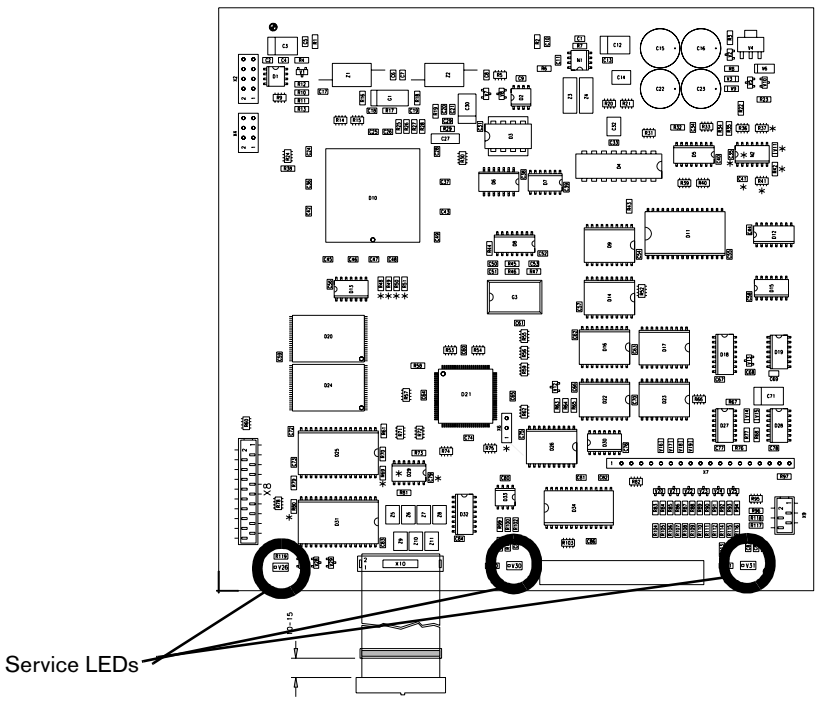

Fig. 79 View of the WT2 Controller PCB, side A

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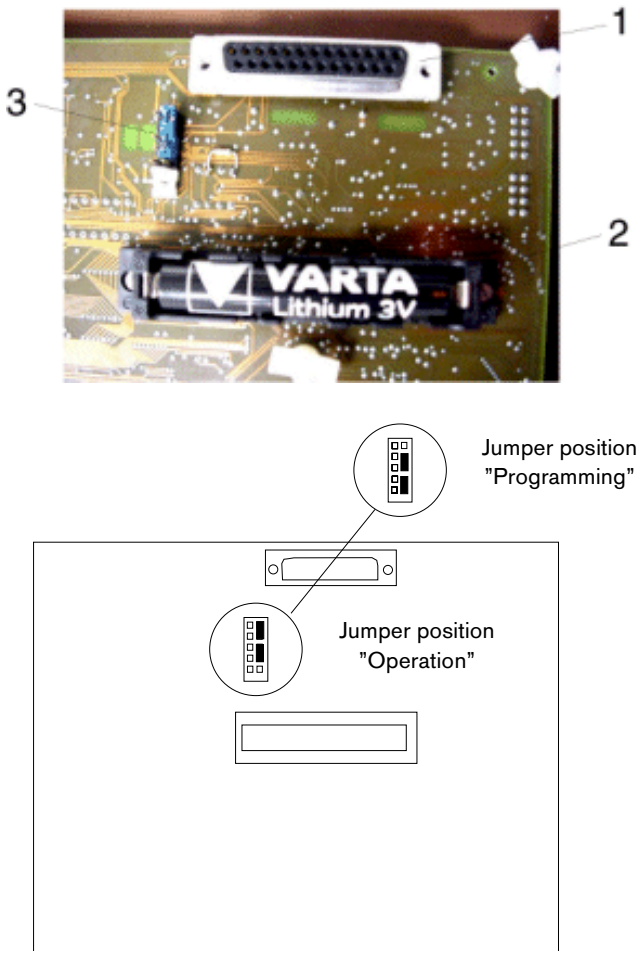

Fig. 80 Detail of the WT2 Controller PCB, side B

1 = aggregate connector

2 = lithium battery

3 = jumpers

4.6.2 Checking the WT2 Controller PCB during normal operation

1. Assemble Caleo ready for use.
2. Plug power plug of Caleo into mains socket.
3. Switch on Caleo at ON/OFF switch.

Caleo runs through its self-test. After completion of the self-test, Caleo should switch to operating mode without problems.

4. Switch off Caleo at ON/OFF switch.

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4.6.3 Testing the WT2 Controller PCB using the service LEDs

1. Assemble Caleo ready for use.
2. Plug power plug of Caleo into mains socket.
3. Switch on Caleo at ON/OFF switch.

During the self-test, LED 31 indicates the following:

- LED V31 is off (meaning: everything is OK)
- LED V31 flashes once (meaning: the EEPROM is faulty)
- LED V31 flashes twice (meaning: the RAM is faulty)

During operation, the LEDs indicate the following:

- LED V31 is on (everything is OK)
  (But a keypad test can be carried out with LED V31: When any key is pressed during operation, LED V31 will flash once every 2 seconds)
- LED V26 is on (meaning: 5 V voltage is OK)
- LED V30 is on (meaning: Microprocessor is OK)

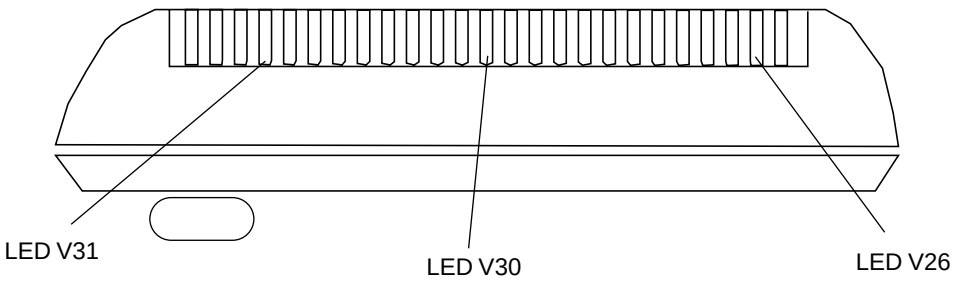

Fig. 81 Bottom view of the display housing

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4.6.4 Replacing the WT2 Controller PCB

1. Dismount display housing from trolley, see section "4.2.1".
2. Open rear panel of display housing, see 4.3.1.
3. Remove electronic unit from display housing, see 4.4.1.
4. Open electronic unit, see 4.4.2.
5. Disconnect flexible lead cable connector (1) from WT2 Controller PCB.

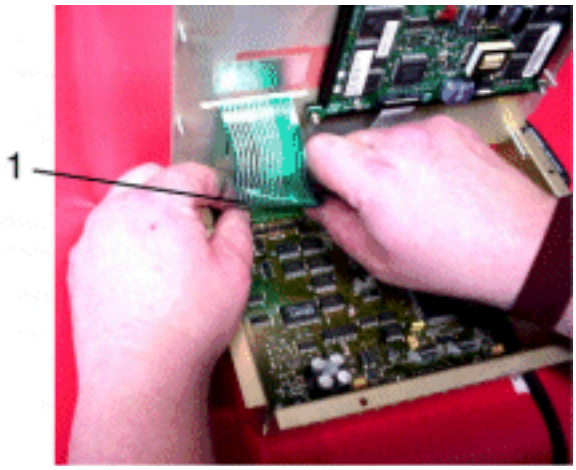

Fig. 82 Flexible lead cable connector

6. Disconnect rotary transducer cable connector from WT2 Controller PCB.

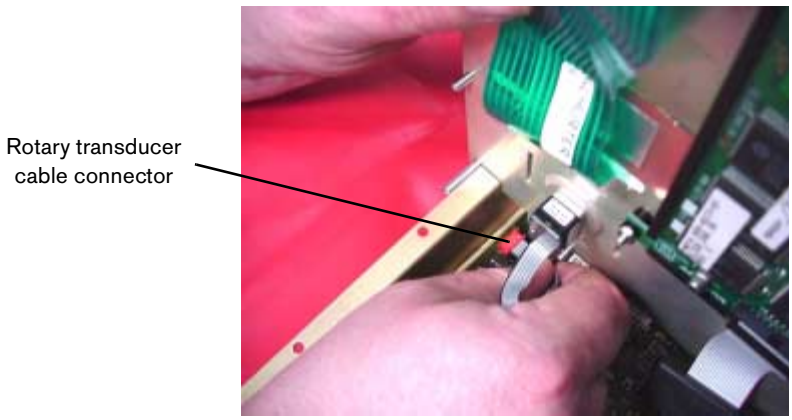

Fig. 83 Rotary transducer cable connector

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7. Disconnect WT2 Controller PCB cable connector from EL display.

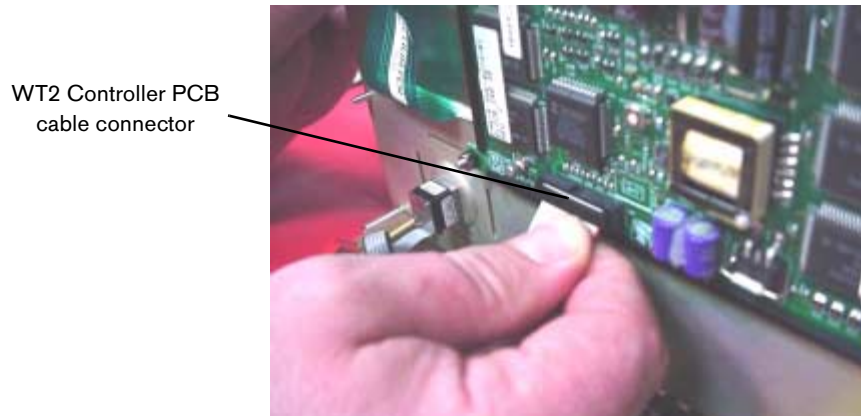

Fig. 84 WT2 Controller PCB cable connector

8. Turn electronic unit over and remove screws (a).

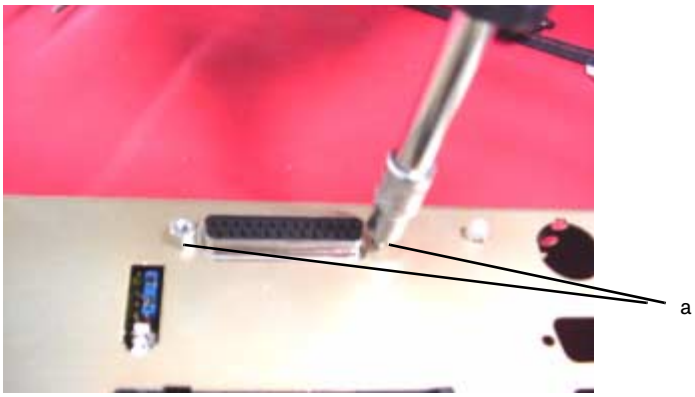

Fig. 85 Rear view of the electronic unit

9. Compress plastic holder (attached to cover of electronic unit) with pliers and push out of cover.

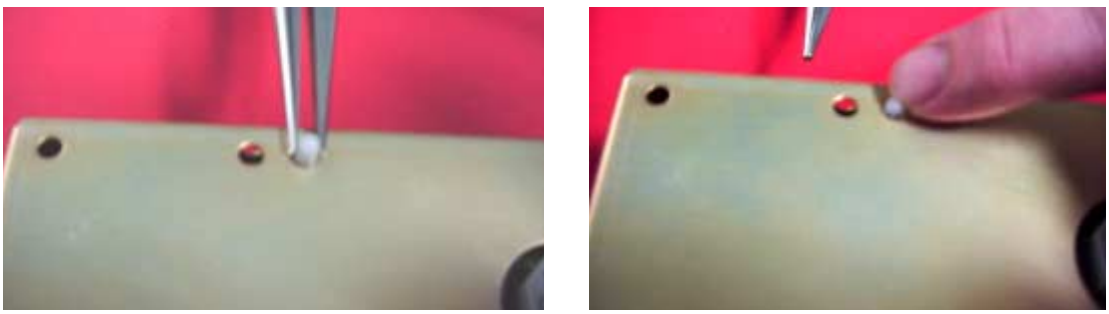

Fig. 86 Plastic holder

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10. Compress plastic holder with pliers and push out of WT2 Controller PCB.

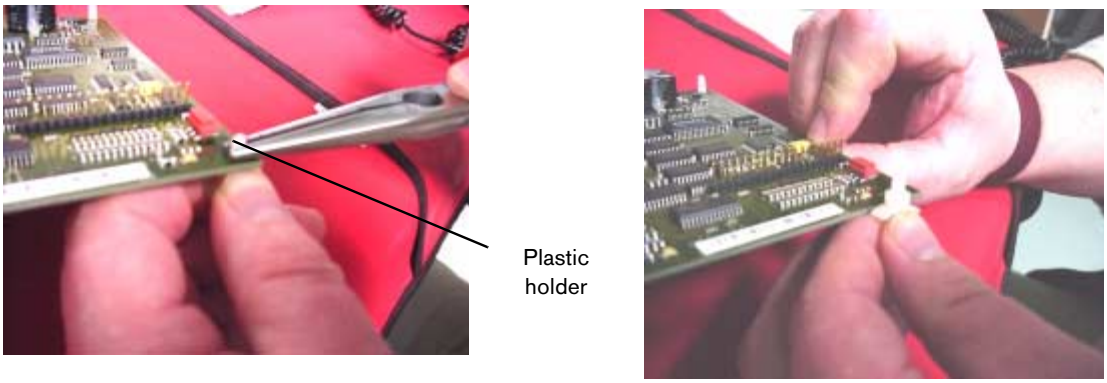

Fig. 87 Plastic holder

11. Remove faulty WT2 Controller PCB and uninstall lithium battery from holder on back.
12. Fit this lithium battery (pay attention to correct fitting position) into holder of new WT2 Controller PCB.
13. Remove jumpers from faulty WT2 Controller PCB and plug onto new WT2 Controller PCB (pay attention to correct fitting position).

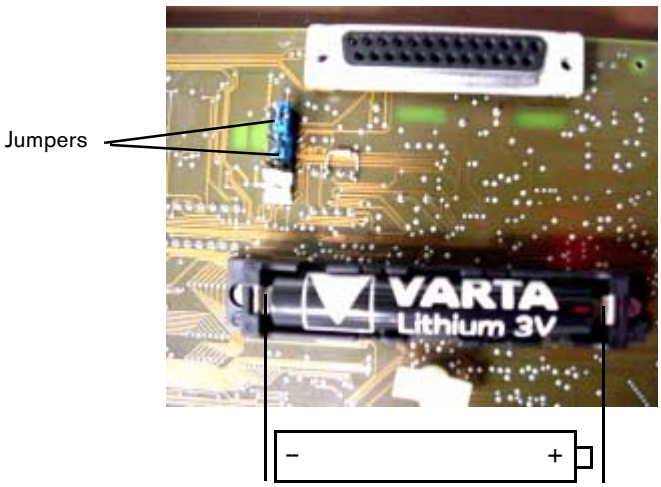

Fig. 88 Lithium battery and jumpers

14. Dispose of faulty WT2 Controller PCB according to local waste disposal regulations.

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15. Push plastic holder (correct side) into new WT2 Controller PCB, see Fig. 87, and fit WT2 Controller PCB into cover of display housing.

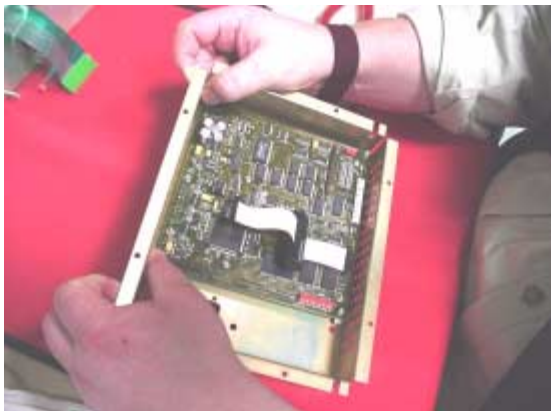

Fig. 89 Installing the WT2 Controller PCB

16. Plug rotary transducer cable connector onto the WT2 Controller PCB.

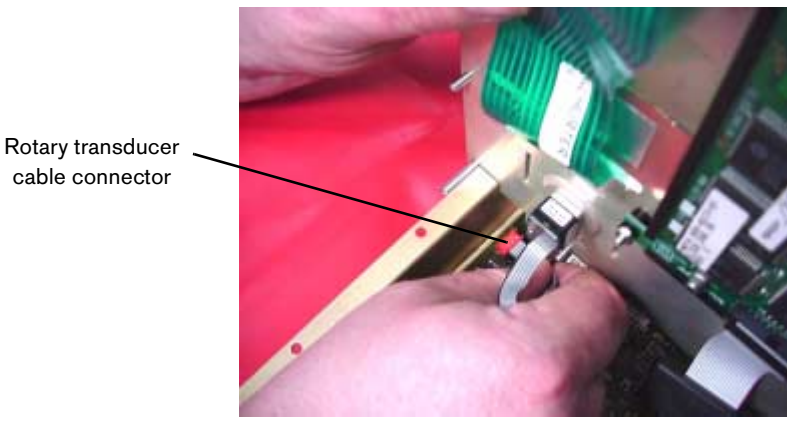

Fig. 90 Rotary transducer cable connector

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17. Plug flexible lead cable connector (1) onto the WT2 Controller PCB.

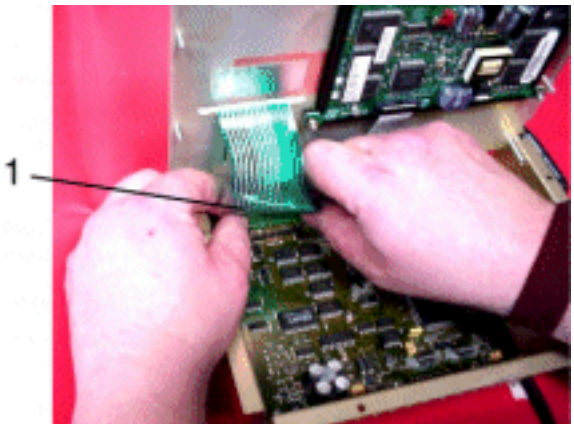

Fig. 91 Flexible lead cable connector

18. Plug WT2 Controller PCB cable connector onto EL display.

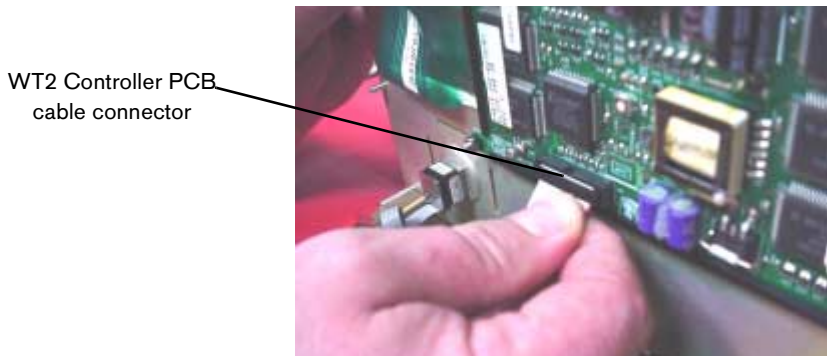

Fig. 92 WT2 Controller PCB cable connector

19. Fit electronic unit into display housing, see 4.4.3.

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20. Secure socket to cover using screws (b).

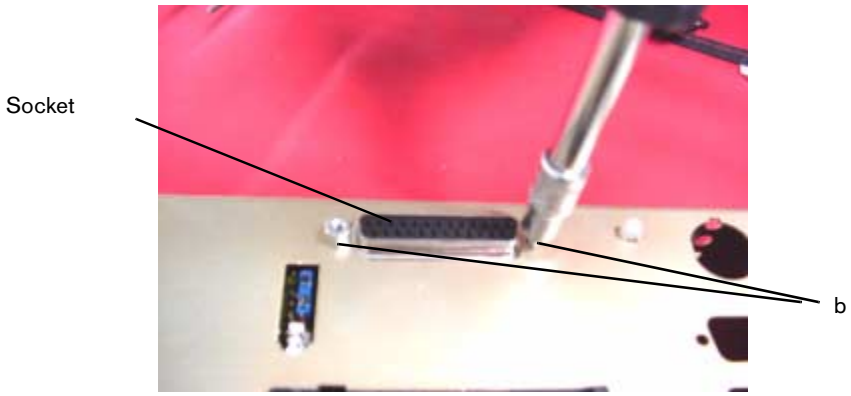

Fig. 93 Socket

21. Close rear panel of display housing, see 4.3.2.
22. Mount display housing onto trolley, see "4.2.2".
23. Plug power plug of Caleo into mains socket.
24. Switch on Caleo at ON/OFF switch.
25. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
26. Switch off Caleo at ON/OFF switch.

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4.7 Lithium battery

- Replace lithium battery according to replacement intervals specified in the Instructions for Use/Operating Instructions.

4.7.1 Replacing the lithium battery

Before replacing lithium battery, read out and record operating hours of Caleo.

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Read out and record operating hours of Caleo (Note: Enter recorded operating hours after replacing lithium battery.).
4. Switch off Caleo at ON/OFF switch.
5. Pull power plug of Caleo out of mains socket.
6. Remove screws and washers (1) from cover (2).

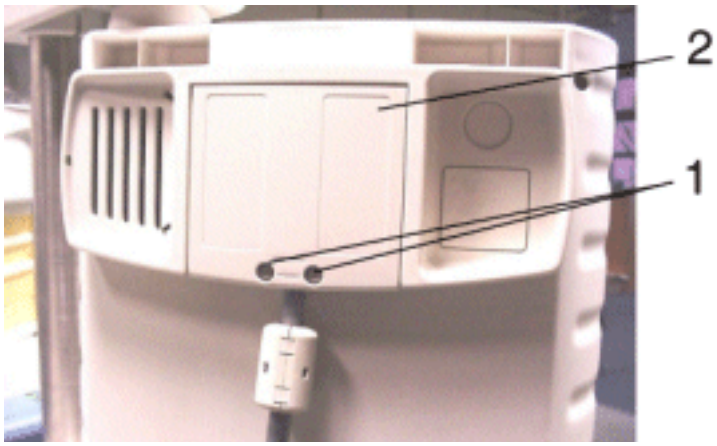

Fig. 94 Rear view of the display housing

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7. Pull cable connector (1) out of plug-in socket, see Fig. 95.

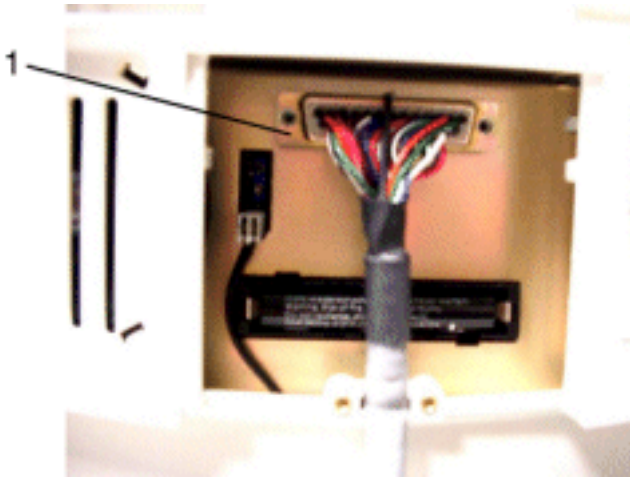

Fig. 95 Rear view of the display housing

8. Remove spent lithium battery from display housing and dispose of according to local waste disposal regulations, see Figure below.

No audible alarm will be generated in case of a malfunction if the lithium battery is installed incorrectly. To ensure that the audible alarm is generated in case of a malfunction, install the new lithium battery into the battery compartment as shown by the battery symbol.

9. Install new lithium battery (pay attention to correct position) into display housing, see Figure below.

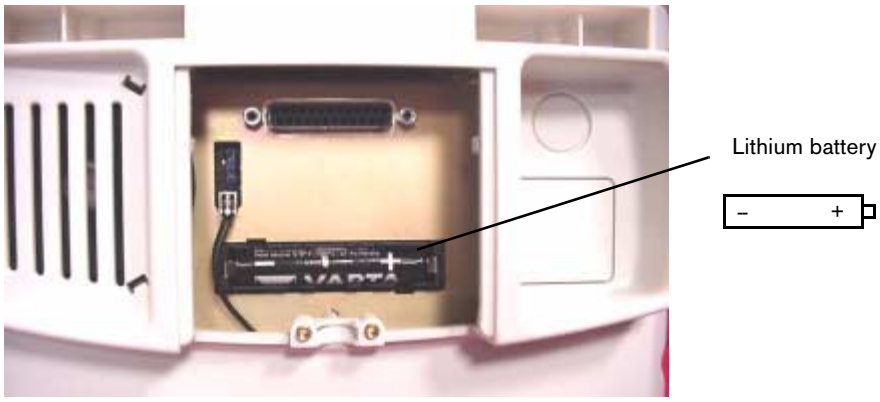

Fig. 96 Rear view of the display housing

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10. Plug cable connector (1) into plug-in socket, see Fig. 97.

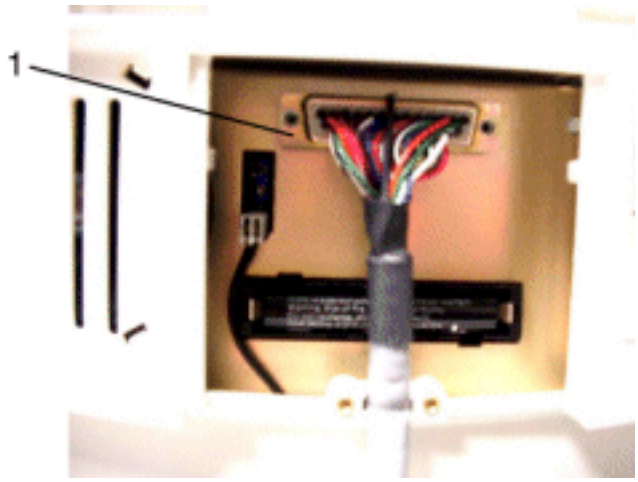

Fig. 97 Rear view of the display housing

11. Secure cover (2) to display housing using screws and washers (1), see Fig. 98.

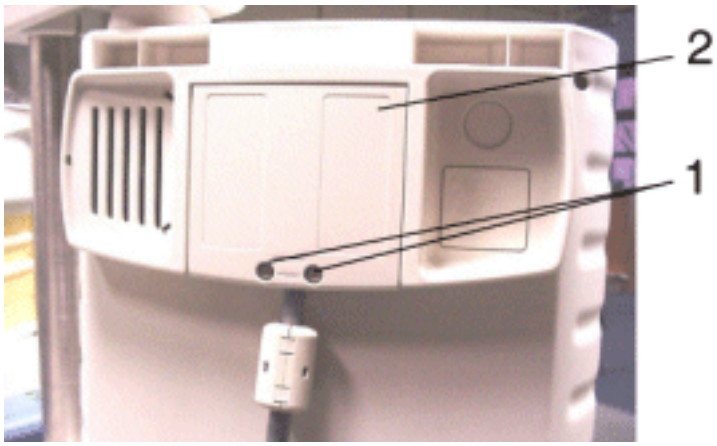

Fig. 98 Rear view of the display housing

12. Plug power plug of Caleo into mains socket.
13. Switch on Caleo at ON/OFF switch.

Optional height adjustment can be activated only a few minutes after power-on.

14. Enter target values.

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15. Check whether target values are accepted in the event of a warm start.

If target values are accepted, check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".

If target values are not accepted, replace WT2 Controller PCB.

16. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
17. Switch off Caleo at ON/OFF switch.

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4.8 Membrane keypad

4.8.1 General information about the valve block

In case of repair, replace complete membrane keypad.

Fig. 99 Membrane keypad

4.8.2 Checking the membrane keypad during normal operation

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Press one key after the other.

The respective function is activated. The LED on the respective key comes on or flashes.

6. Switch off Caleo at ON/OFF switch.

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4.8.3 Checking the membrane keypad using the DrägerService Mode

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Call up DrägerService mode, see DrägerService mode, section "Keypad diagnosis".
6. Switch off Caleo at ON/OFF switch.

4.8.4 Replacing the membrane keypad

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Dismount display housing from trolley, see section "4.2.1".

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

4. Create ESD conditions.
5. Open display housing, see 4.3.1.
6. Remove electronic module from display housing, see 4.4.1.
7. Open electronic unit, see 4.4.2.
8. Disconnect flexible lead cable connector (1) from WT2 Controller PCB.

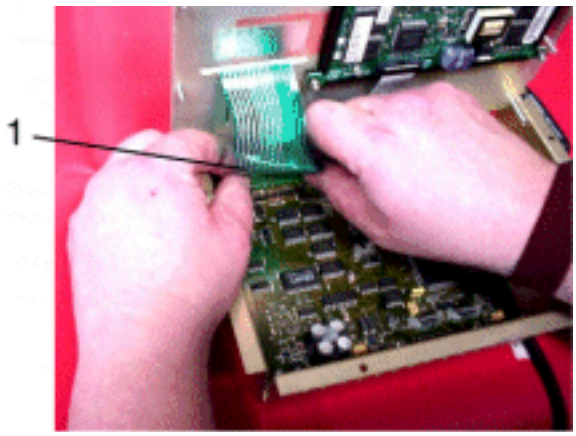

Fig. 100 Flexible lead cable connector

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9. Disconnect rotary transducer cable connector from WT2 Controller PCB.

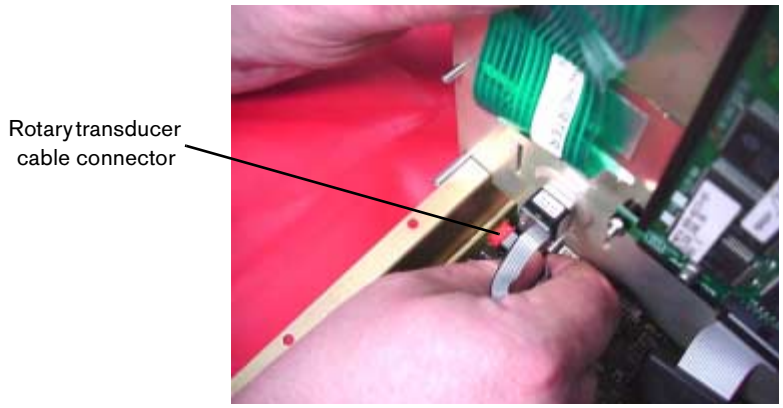

Fig. 101 Rotary transducer cable connector

10. Disconnect WT2 Controller PCB cable connector from EL display.

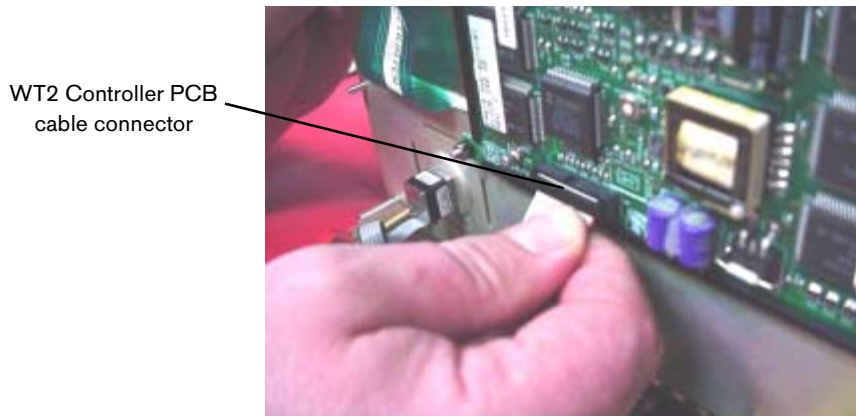

Fig. 102 WT2 Controller PCB cable connector

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11. Remove nuts, washers, and plastic washers (a), and put EL display aside.

Fig. 103 EL display

12. Turn membrane keypad over and remove control knob.
13. Remove nut and washer (b) and take control knob out of membrane keypad from the rear.

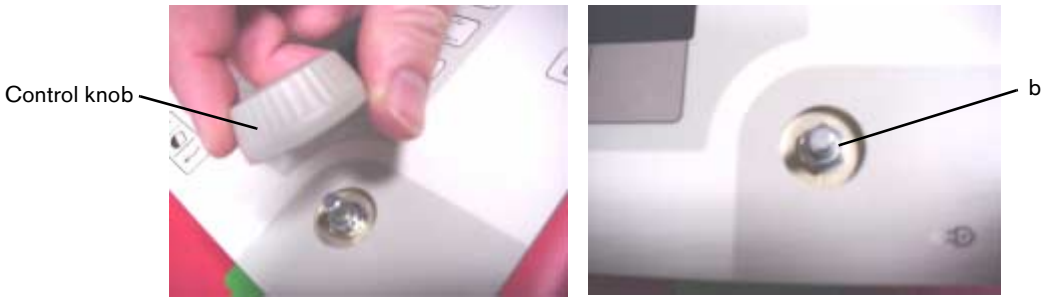

Fig. 104 Control knob

14. Dispose of faulty membrane keypad according to local waste disposal regulations.

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15. Secure EL display to new membrane keypad using plastic washers, washers, and nuts (Note: Pay attention to different thickness of plastic washers and their correct fitting positions!).

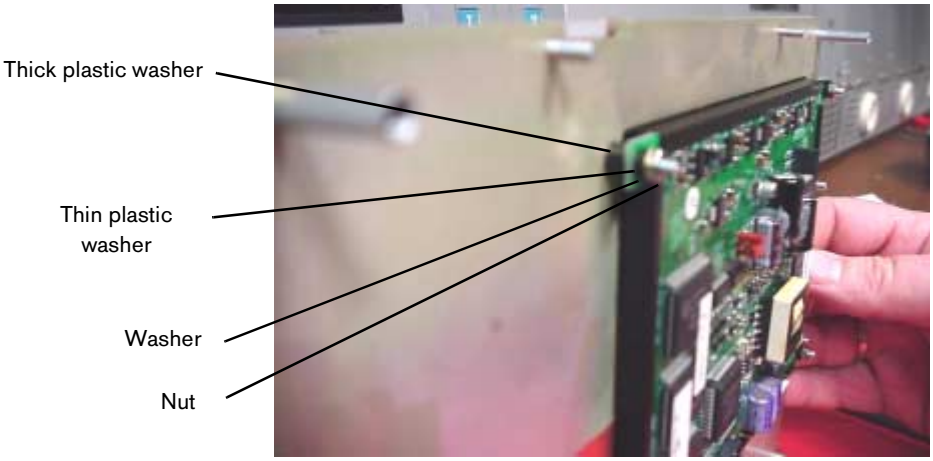

Fig. 105 EL display

16. Insert control knob through new membrane keypad from the rear and secure to membrane keypad using nut and washer (b).
17. Press control knob onto rotary transducer (Note: Pay attention to flat form on inside of control knob.)

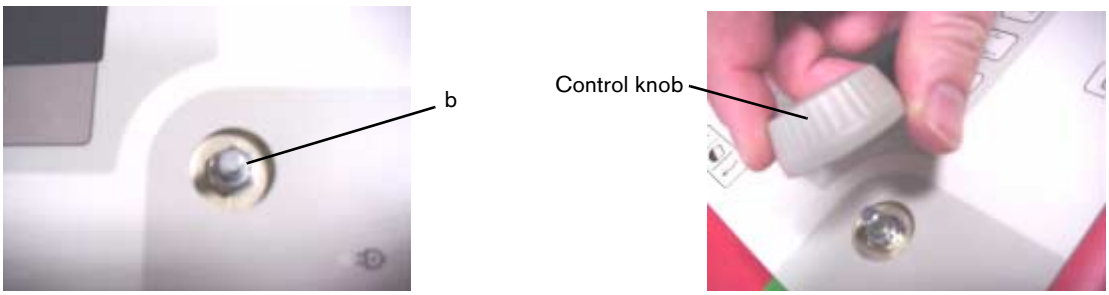

Fig. 106 View of the membrane keypad

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18. Connect rotary transducer cable connector to WT2 Controller PCB.

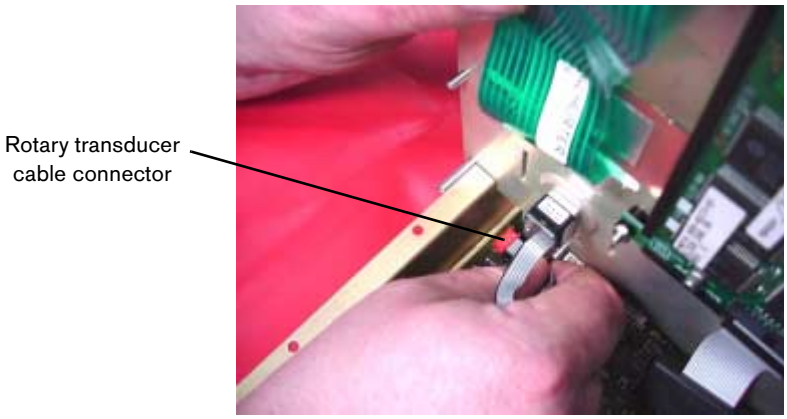

Fig. 107 Rotary transducer cable connector

19. Connect flexible lead cable connector (1) to WT2 Controller PCB.

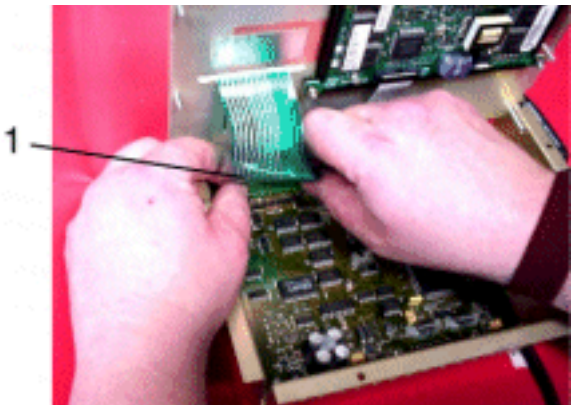

Fig. 108 Flexible lead cable connector

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20. Plug WT2 Controller PCB cable connector onto EL display.

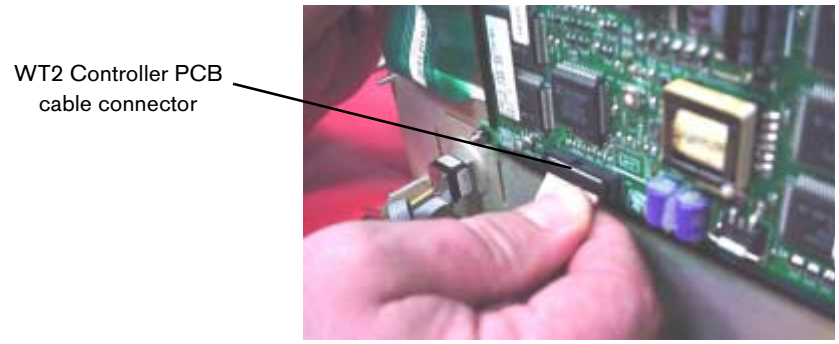

Fig. 109 WT2 Controller PCB cable connector

21. Fit electronic unit into display housing, see 4.4.3.
22. Close rear panel of display housing, see 4.3.2.
23. Mount display housing onto trolley, see "4.2.2".
24. Plug power plug of Caleo into mains socket.
25. Switch on Caleo at ON/OFF switch.
26. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
27. Check Caleo using DrägerService mode, chapter "Diagnosis", section "Keypad".
28. Switch off Caleo at ON/OFF switch.

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4.9 Rotary transducer/control knob assembly

4.9.1 General information about the rotary transducer/control knob assembly

In case of repair, replace complete rotary transducer/control knob assembly.

4.9.2 Checking the rotary transducer

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.

Caleo runs through its self-test.

3. Turn rotary transducer (control knob).

Parameters should change.

4. Switch off Caleo at ON/OFF switch.

4.9.3 Replacing the rotary transducer

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Disconnect oxygen supply connector from wall terminal unit or compressed-gas cylinder.
4. Dismount display housing from trolley, see section "4.2.1".

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

5. Create ESD conditions.
6. Open rear panel of display housing, see 4.3.1.
7. Remove electronic unit from display housing, see 4.4.1.

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8. Disconnect cable connector from WT2 Controller PCB.

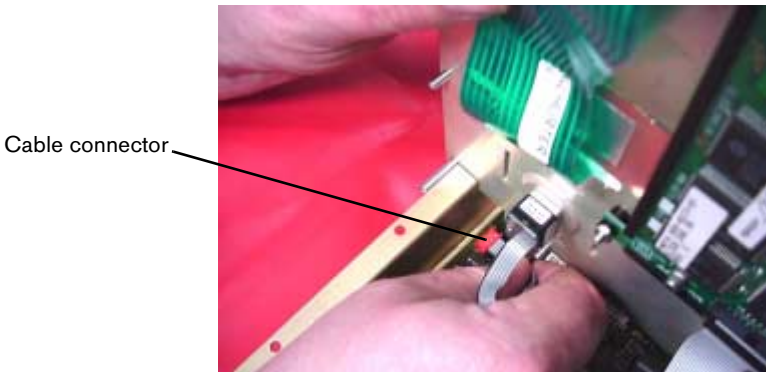

Fig. 110 Cable connector

9. Pull control knob out of front of display housing.
10. Remove nut and washer (a) and take rotary transducer out of membrane keypad from the rear.

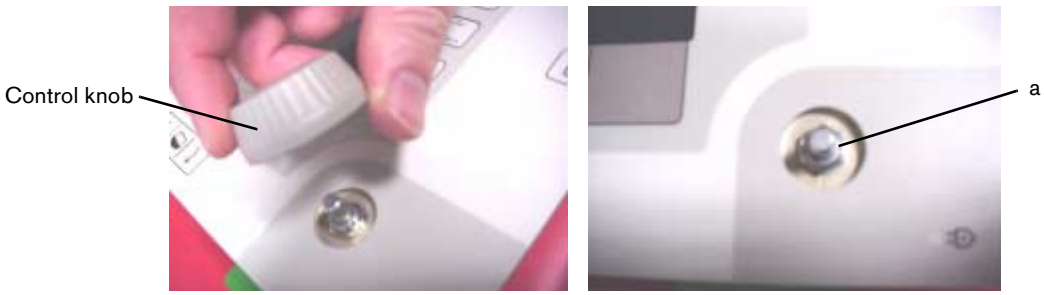

Fig. 111 Control knob

11. Dispose of faulty rotary transducer according to local waste disposal regulations.
12. Insert new rotary transducer into front of display housing (from the inside) and secure it to front using nut and washer (a), see Fig. 111.
13. Observe fitting positions (flat side) of rotary transducer and control knob and press control knob onto rotary transducer from the front.

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14. Plug cable connector onto WT2 Controller PCB.

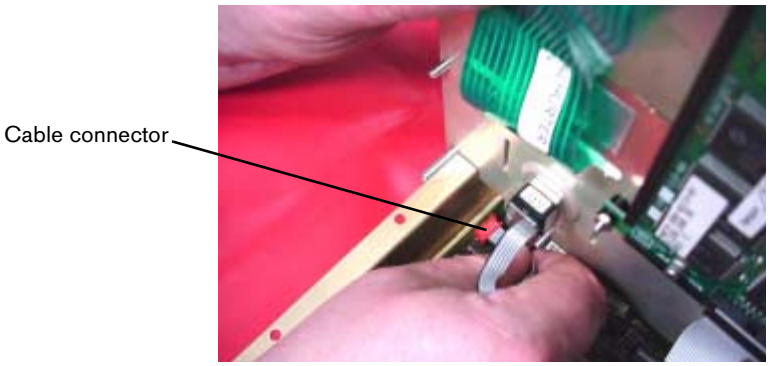

Fig. 112 Cable connector

15. Fit electronic unit into display housing, see 4.4.3.
16. Close rear panel of display housing, see 4.3.2.
17. Mount display housing onto trolley, see "4.2.2".
18. Plug power plug of Caleo into mains socket.
19. Switch on Caleo at ON/OFF switch.
20. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
21. Switch off Caleo at ON/OFF switch.

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4.10 Loudspeaker

4.10.1 General information about the loudspeaker

In case of repair, replace complete loudspeaker.

4.10.2 Checking the loudspeaker during normal operation

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.

The Caleo runs through its self-test. The visual and audible alarms are deactivated.

3. Switch off Caleo at ON/OFF switch.

4.10.3 Replacing the loudspeaker

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Dismount display housing from trolley, see section "4.2.1".

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

4. Create ESD conditions.
5. Remove screws and washers (1), see Fig. 113.

Fig. 113 Rear view of the display housing

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6. Lift rear panel of display housing slightly and disconnect loudspeaker connector (1), see Fig. 114.

Fig. 114 View of open display housing

7. Carefully push holder a little away from the loudspeaker and slide faulty loudspeaker out of holders.
8. Dispose of faulty loudspeaker according to local waste disposal regulations.
9. Carefully push holder away a little and mount new loudspeaker into holders.

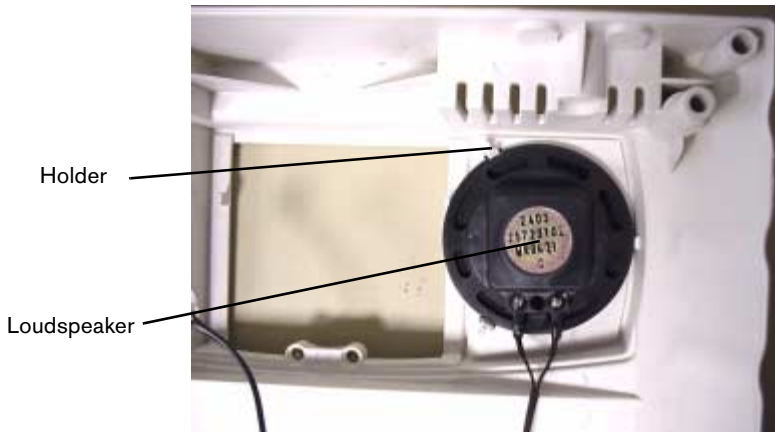

Fig. 115 Loudspeaker

10. Close rear panel of display housing, see 4.3.2.
11. Mount display housing onto trolley, see section "4.2.2".
12. Plug power plug of Caleo into mains socket.
13. Switch on Caleo at ON/OFF switch.

Caleo runs through its self-test. The visual and audible alarms are deactivated.

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14. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
15. Switch off Caleo at ON/OFF switch.

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5 Aggregate housing

Fig. 116 View of the aggregate housing (dismounted)

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5.1 Swinging the aggregate housing out of the basic housing

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Move optional electrical height adjustment to highest position.
4. Tilt mattress tray to the left.

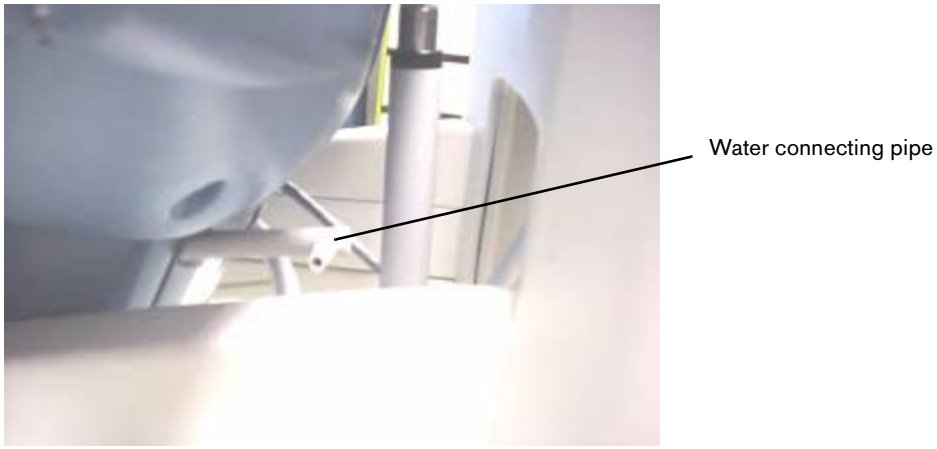

Fig. 117 Mattress tray tilted

5. Turn water connecting pipe 90° upwards and pull out of Caleo.

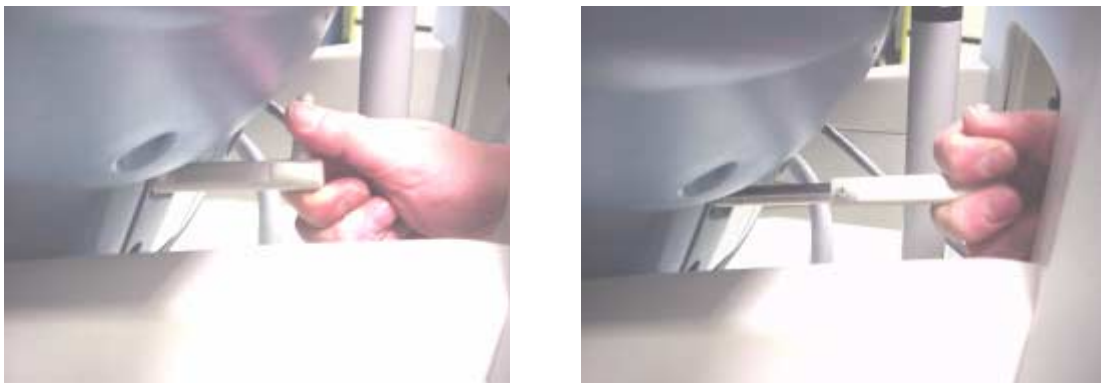

Fig. 118 Dismounting the water connecting pipe

6. Move Caleo mattress tray to central position.
7. Switch off Caleo at ON/OFF switch.
8. Pull power plug of Caleo out of mains socket.
9. Disconnect optional oxygen supply connector from wall terminal unit or compressed-gas cylinder.

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10. Unscrew cable connector counter-clockwise.

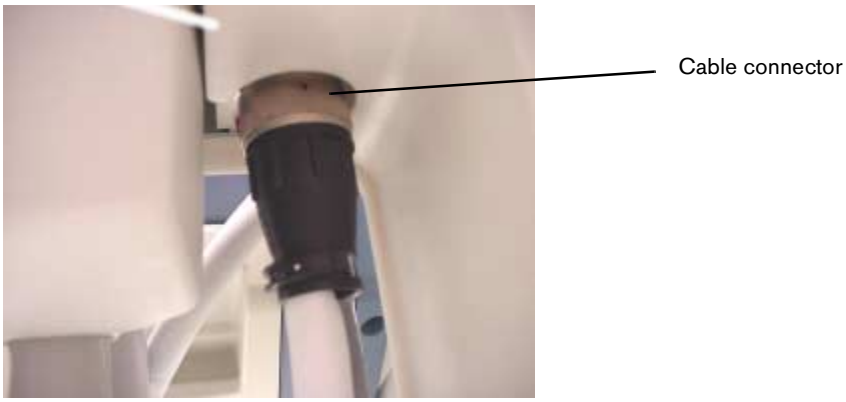

Fig. 119 Side view of Caleo

11. Unscrew compressed-gas connector from pneumatic connection for optional O_2 control.

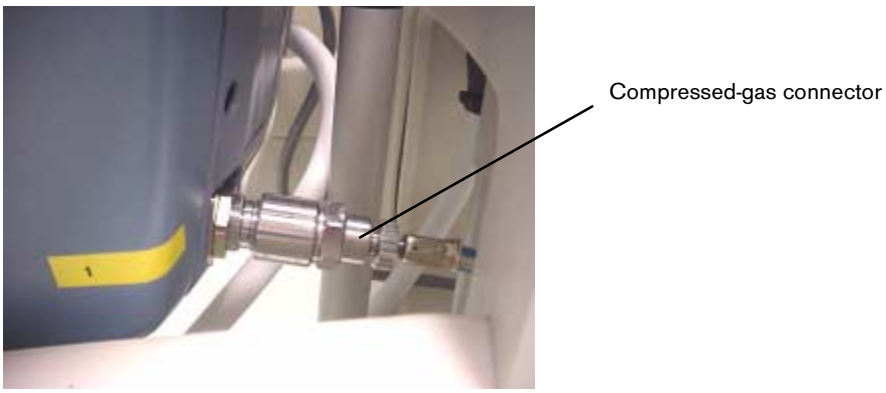

Fig. 120 Pneumatic connector for O_2 control

12. Loosen screws (a) until aggregate housing is no longer attached to basic housing.

Fig. 121 Left and right bottom view of Caleo

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The aggregate housing is heavy and will swivel down fast after operating the catch (see the following Figure). Support the aggregate housing with one hand and allow it to swivel down smoothly.

13. Push in catch of aggregate housing using your thumb and lower aggregate housing **slowly**.

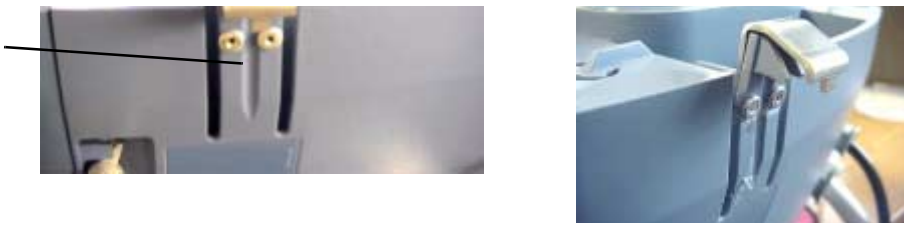

Fig. 122 Bottom view of the Caleo

The aggregate housing opens up to the retaining strips.

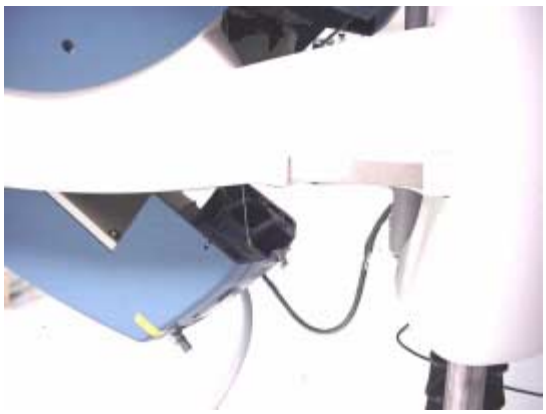

Fig. 123 Aggregate housing, swiveled

14. If necessary, remove aggregate housing from basic unit, see section "5.2".

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5.2 Removing the aggregate housing from the basic housing

1. Swing aggregate housing open, see 5.1.
2. Remove screws and washers (a) and put cover aside.

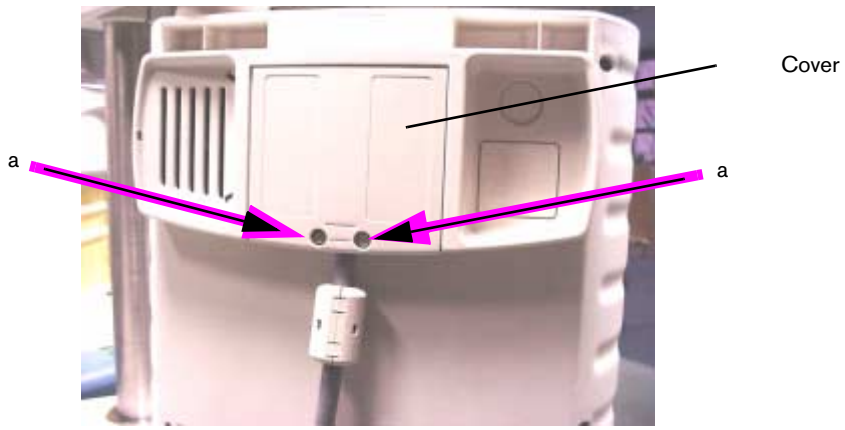

Fig. 124 Rear view of the display housing

3. Pull cable connector (1) out of plug-in socket, see Fig. 125.

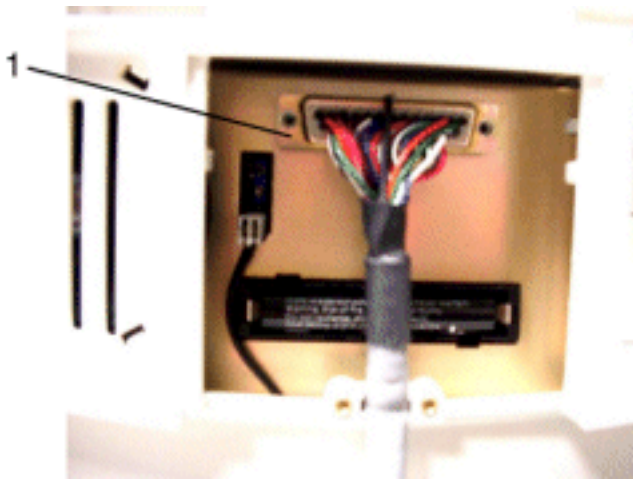

Fig. 125 Rear view of the display housing

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4. Press plastic latch of cable connector onto cable connector and pull cable connector out of scale's electronic assembly.

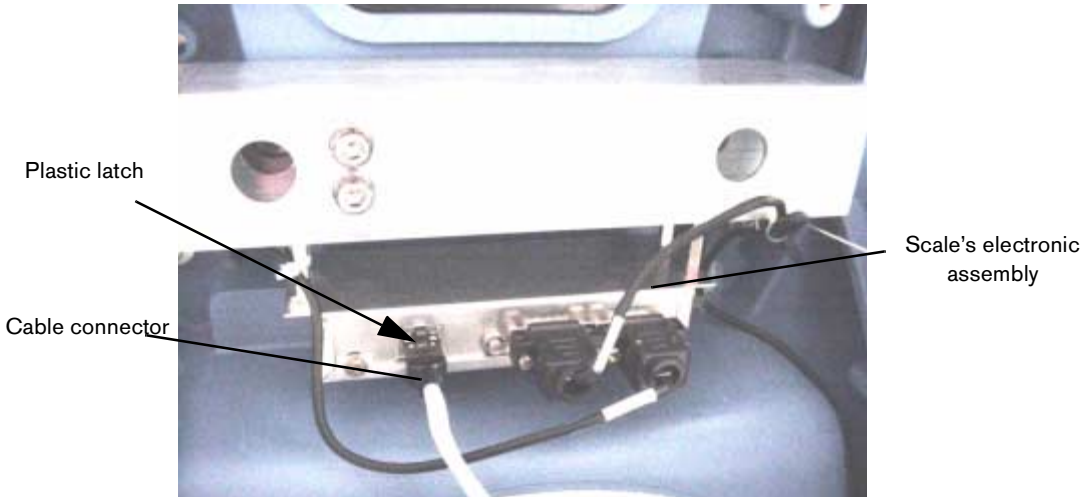

Fig. 126 Bottom view of the basic housing

5. Take retaining strips (a) off aggregate housing.

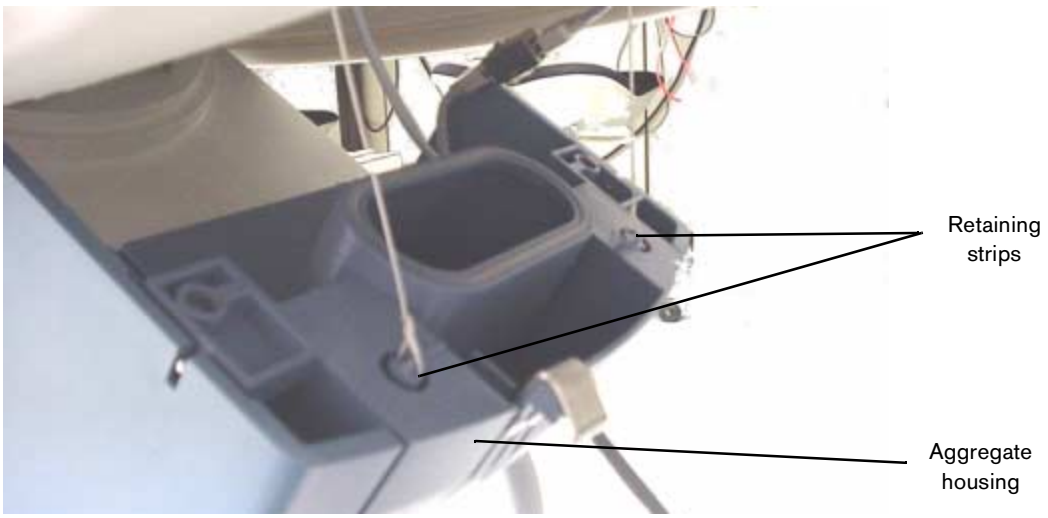

Fig. 127 Retaining strips

6. Take aggregate housing off basic housing (preferably using help of another person) and place it on a stable surface.

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5.3 Mounting the aggregate housing onto the basic housing

1. Mount aggregate housing onto basic housing (preferably using help of another person).
2. Attach retaining strips (a) to aggregate housing.

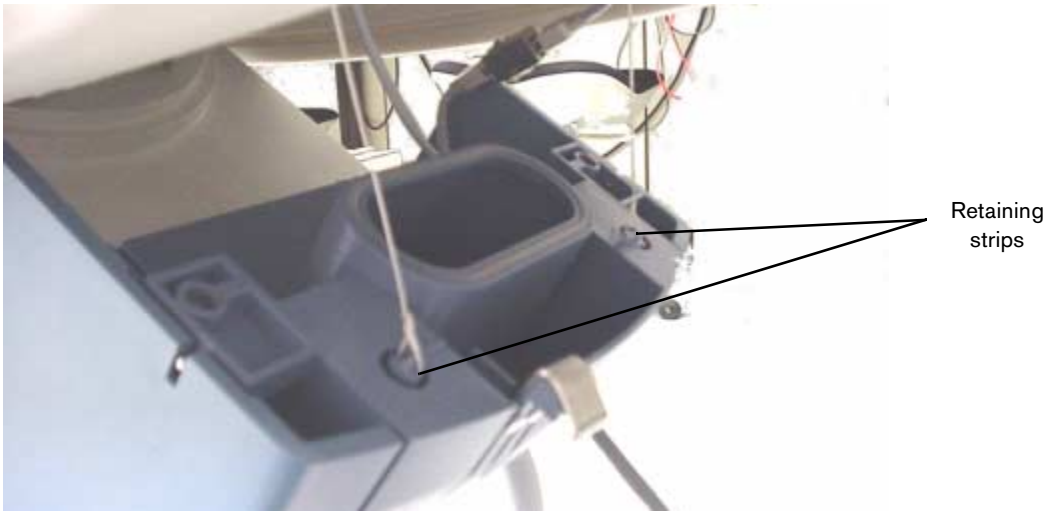

Fig. 128 Retaining strips

3. Pay attention to predominant direction of cable connector and plug cable connector into scale's electronic assembly until it engages audibly.

Fig. 129 Bottom view of the basic housing

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4. Close aggregate housing until its catch engages in the basic housing (make sure not to squeeze any hoses or cables while doing so).

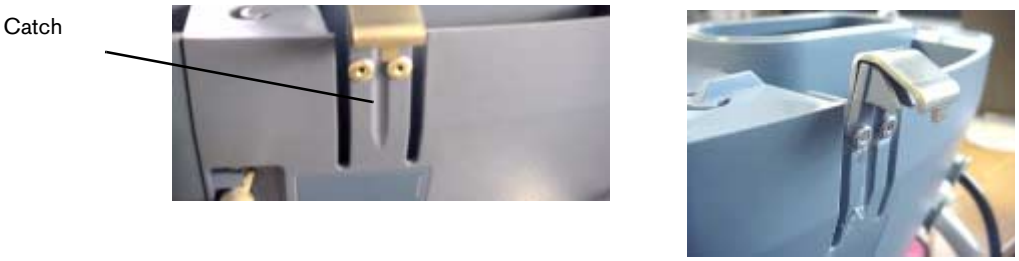

Fig. 130 Catch

5. Secure aggregate housing to basic housing using screws (b) (Note:. The tightening torque of the screws is 3.5 +0.5 Nm!).

Fig. 131 Screws of aggregate housing

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6. Check that pins of connector are not bent or damaged and screw connector clockwise into electronic unit until connector engages (Note: Carefully straighten bent pins using, for example, pointed pliers).

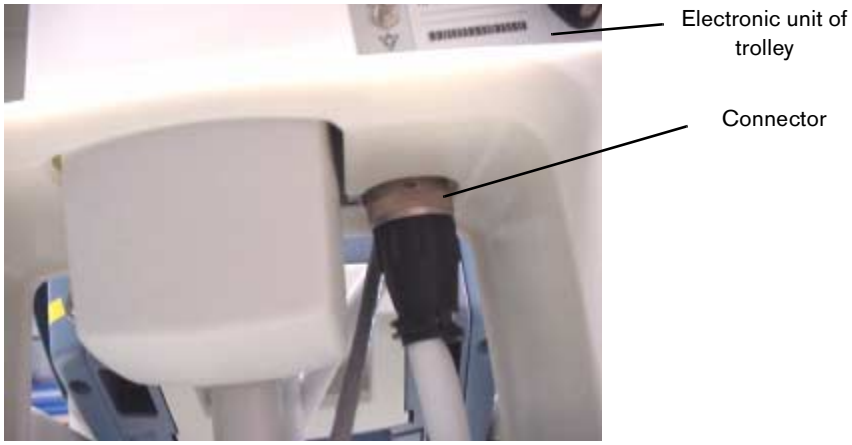

Fig. 132 Cable connector

7. Push the water connecting pipe (hose connector points upwards) into the Caleo, see the following Figure.
8. Turn the water connecting pipe 90° downwards.

The water connecting pipe is now locked in Caleo.

Fig. 133 Mounting the water connecting pipe

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9. Plug cable connector (1) into plug-in socket of the display housing, see Fig. 134.

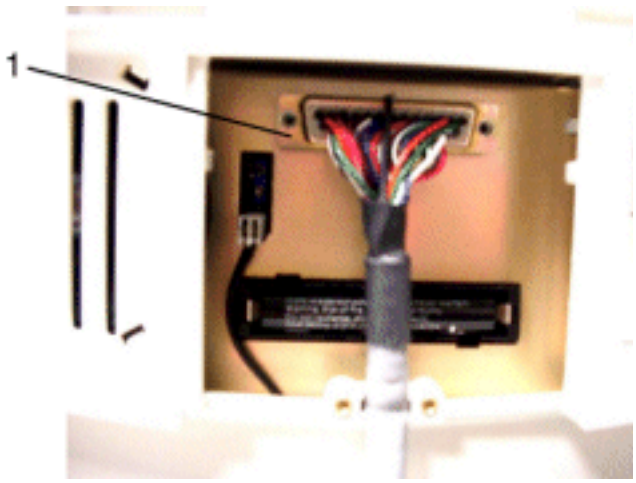

Fig. 134 Rear view of the display housing

10. Secure cover to display housing using screws and washers (c).

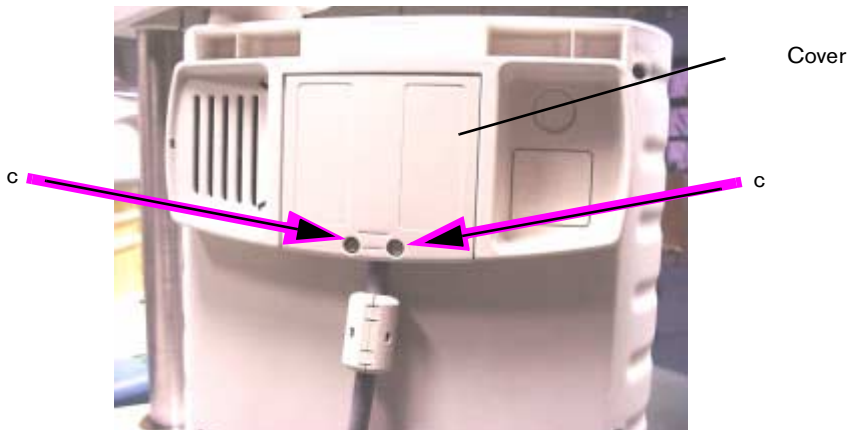

Fig. 135 Rear view of the display housing

11. Plug power plug of Caleo into mains socket.
12. Switch on Caleo at ON/OFF switch.
13. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
14. Switch off Caleo at ON/OFF switch.
15. Pull power plug of Caleo out of mains socket.

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5.4 Air heater

The air heater consists of a stator/heating element assembly, temperature sensor, safety thermostat, and WT2 Hallsensor PCB.

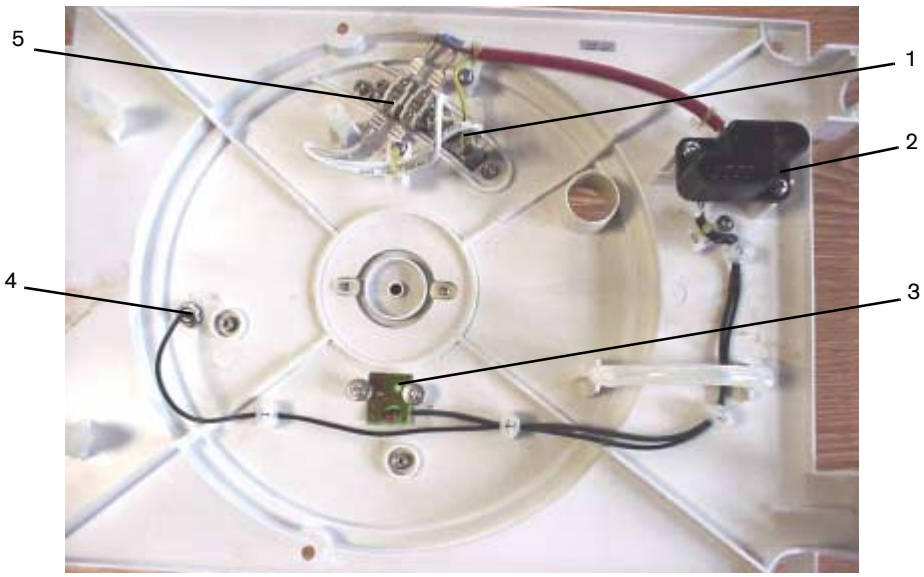

Fig. 136 Air heater

Key

1	Stator/heating element assembly
2	AMP connector
3	WT2 Hallsensor PCB
4	Temperature sensor
5	Safety thermostat

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5.4.1 Stator/heating element assembly

In case of repair, replace complete stator/heating element assembly.

Checking stator/heating element assembly during normal operation

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Check stator/heating element assembly, see Test Certificate, section "Air-temperature control".
6. Switch off Caleo at ON/OFF switch.

Checking the stator/heating element assembly using DrägerService mode

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Check stator/heating element assembly, see DrägerService mode "Diagnosis", section "Output signals".

Checking ohmic resistance of heating element

Immediately after use, the air heater of the Caleo is still hot and can cause burns. Allow the air heater of the Caleo to cool down before touching it.

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Swing aggregate housing open, see section "5.1".
4. Remove aggregate, see section "5.2".
5. Take off fan wheel.

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6. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 139.
7. Remove screws and washers (1), see Fig. 139.
8. Remove stator/heating element assembly from aggregate housing.

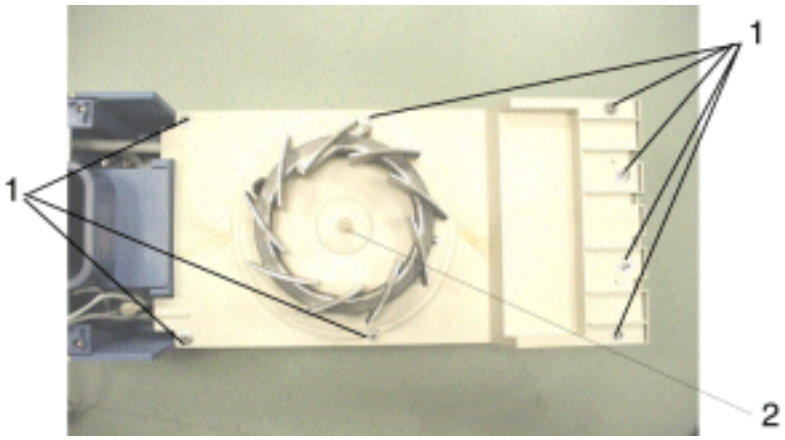

Fig. 137 Front view of the air heater

9. Turn stator/heating element assembly over (stator down).
10. Set measuring range on measuring instrument to resistance measurement.
11. Connect measuring instrument in parallel to electrical connections.

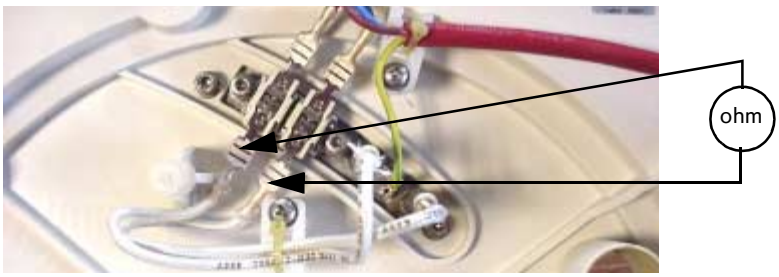

Fig. 138 Measuring instrument connection on heating element

The measured value should be 106 ohm (230-240 V a.c.) or 29 ohm (120-127 V a.c.).

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12. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 139.
13. Fit rubber sleeve (2) onto shaft of fan wheel, see Fig. 139.

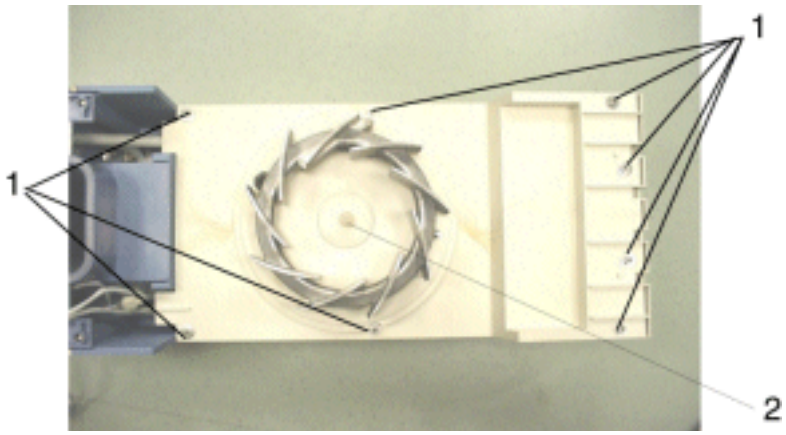

Fig. 139 Front view of the air heater

14. Fit fan wheel onto rubber sleeve of fan motor.
15. Close aggregate housing, see 5.3.
16. Plug power plug of Caleo into mains socket.
17. Switch on Caleo at ON/OFF switch.
18. Check the Caleo, see the Test Certificate, sections "Electrical safety" and "Functional tests".
19. Switch off Caleo at ON/OFF switch.

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Replacing stator/heating element assembly

Immediately after use, the air heater of the Caleo is still hot and can cause burns. Allow the air heater of the Caleo to cool down before touching it.

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Swing aggregate housing open, see section "5.1".
4. Remove aggregate housing from basic unit, see section "5.2".
5. Take off fan wheel.
6. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 140.
7. Remove screws and washers (1), see Fig. 140.
8. Remove stator/heating element assembly from aggregate housing.

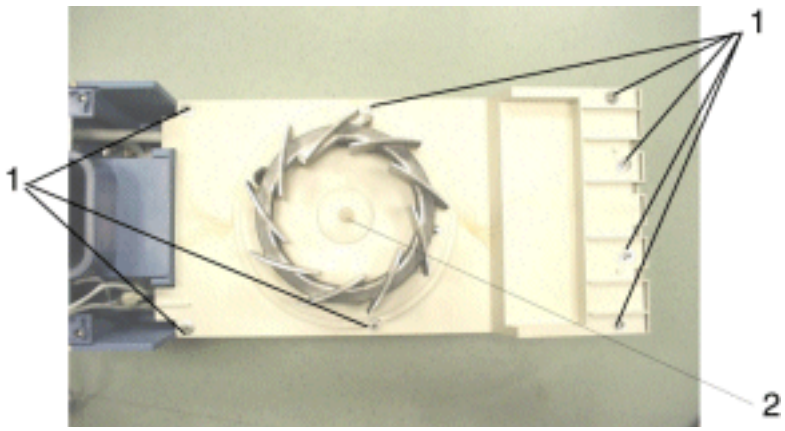

Fig. 140 Front view of the air heater

9. Turn stator/heating element assembly over (stator down).

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10. Disconnect cable lugs from safety thermostat.
11. Remove screws and washers (b) of safety thermostat.

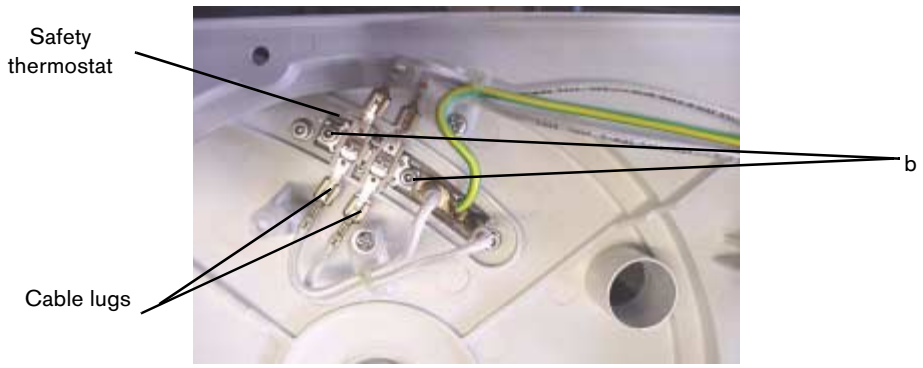

Fig. 141 Safety thermostat

12. Remove screws and washers (c).

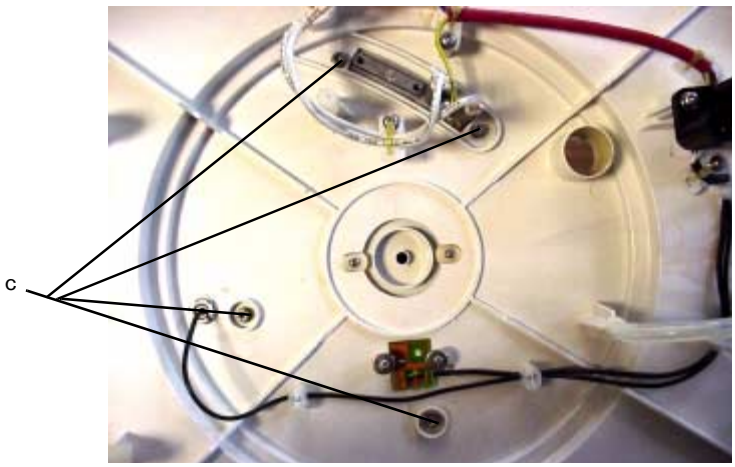

Fig. 142 Attachment of stator/heating element assembly

13. Remove silicone rubber from inlet seam between plastic plate and stator/heating element assembly.
14. Remove faulty stator/heating element assembly and dispose of according to local waste disposal regulations.
15. Secure new stator/heating element assembly to plate using screws and washers (c), see Fig. 142 (Note: The tightening torque of the screws is 3.5 +0.5 Nm!).
16. Seal inlet between plastic plate and stator/heating element assembly with a silicone seam, e.g. using "Elastosil E41 transparent" or "omniVISK".

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17. Secure safety thermostat using screws and washers (d).
18. Slide cable lugs onto connections of safety thermostat.

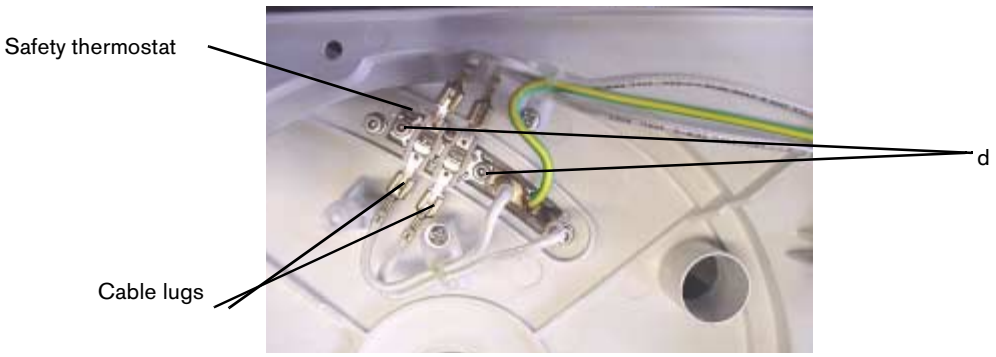

Fig. 143 Safety thermostat

19. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 144.
20. Fit rubber sleeve (2) onto shaft of fan wheel, see Fig. 144.

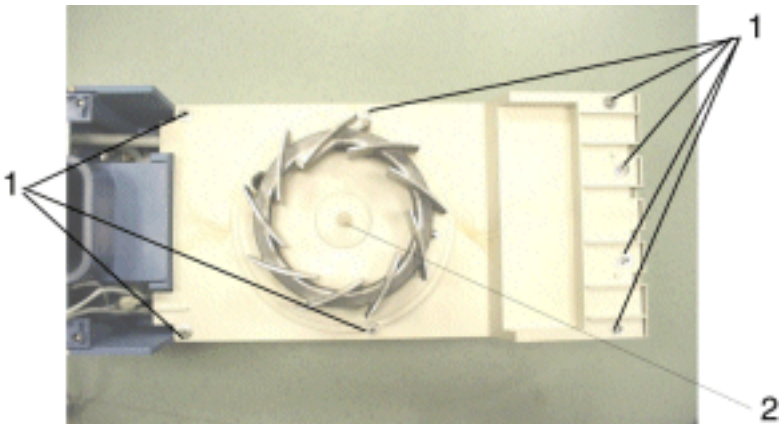

Fig. 144 Front view of the air heater

21. Fit fan wheel onto rubber sleeve of fan motor.
22. Mount aggregate housing onto basic housing, see section "5.3".
23. Plug power plug of Caleo into mains socket.
24. Switch on Caleo at ON/OFF switch.
25. Check the Caleo, see the Test Certificate, sections "Electrical safety" and "Functional tests".
26. Switch off Caleo at ON/OFF switch.

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5.4.2 Safety thermostat

General information about the safety thermostat

In case of repair, replace complete safety thermostat.

Testing the ohmic resistance of the safety thermostat

Immediately after use, the air heater of the Caleo is still hot and can cause burns. Allow the air heater of the Caleo to cool down before touching it.

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Swing aggregate housing open, see section "5.1".
4. Remove aggregate housing from basic unit, see section "5.2".
5. Take off fan wheel.
6. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 145.
7. Remove screws and washers (1), see Fig. 145.
8. Remove stator/heating element assembly from aggregate housing.

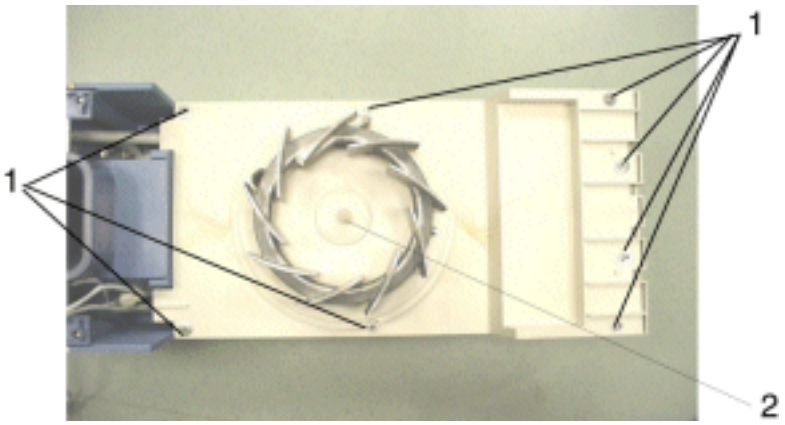

Fig. 145 Front view of the air heater

9. Turn stator/heating element assembly over (stator down).
10. Set measuring range on measuring instrument to resistance measurement.

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11. Connect measuring instrument first to thermostat 1, then to thermostat 2.

The measured values should be 0 ohm each.

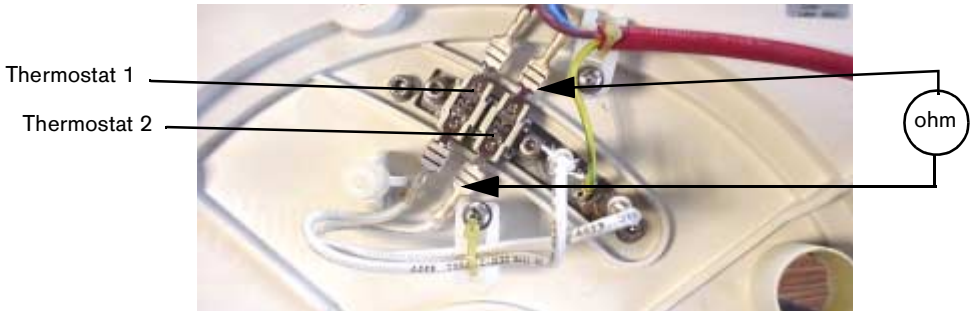

Fig. 146 Measuring instrument connection on heating element

12. Secure air heater to aggregate housing using screws and washers (2) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 147.
13. Fit rubber sleeve (2) onto shaft of fan wheel, see Fig. 147.

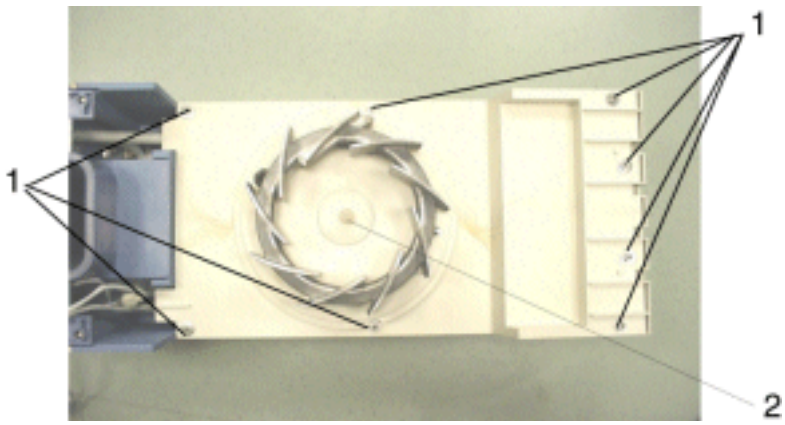

Fig. 147 Front view of the air heater

14. Fit fan wheel onto rubber sleeve of fan motor.
15. Mount aggregate housing onto basic housing, see section "5.3".
16. Plug power plug of Caleo into mains socket.
17. Switch on Caleo at ON/OFF switch.
18. Check the Caleo, see the Test Certificate, sections "Electrical safety" and "Functional tests".
19. Switch off Caleo at ON/OFF switch.

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Replacing the safety thermostat

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Swing aggregate housing open, see section "5.1".
4. Remove aggregate housing from basic unit, see section "5.2".
5. Take off fan wheel.
6. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 148.
7. Remove screws and washers (1), see Fig. 148.
8. Remove stator/heating element assembly from aggregate housing.

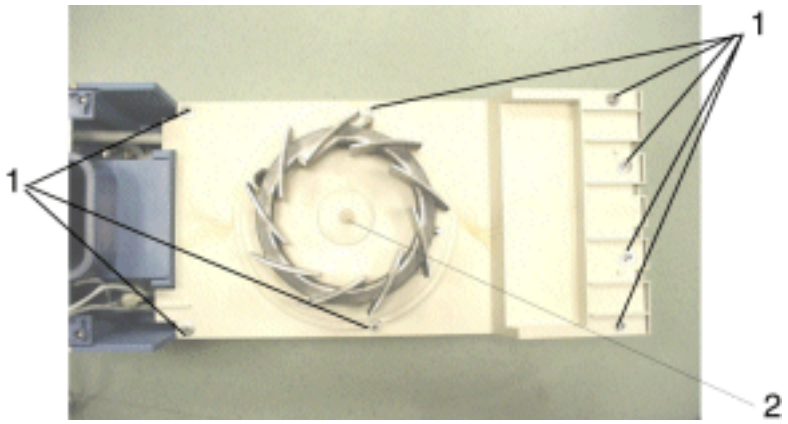

Fig. 148 Front view of the air heater

9. Turn stator/heating element assembly over (stator down).
10. Disconnect cable lugs from safety thermostat.
11. Remove screws and washers (b) of safety thermostat.

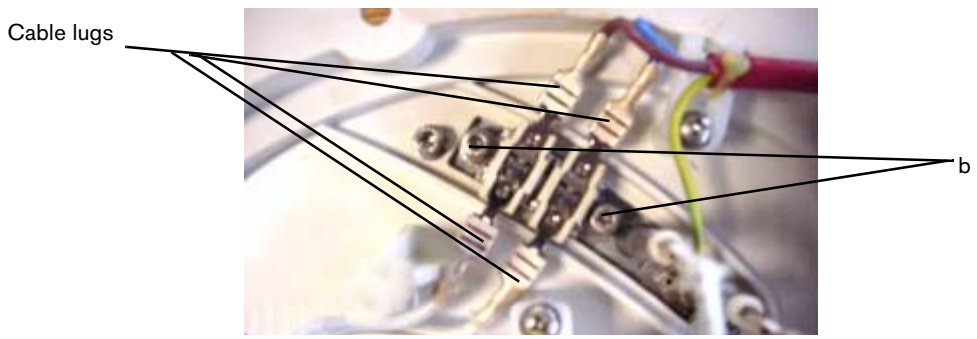

Fig. 149 Safety thermostat

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12. Dispose of faulty safety thermostat according to local waste disposal regulations.
13. Secure new safety thermostat using screws and washers (c).
14. Plug cable lugs onto safety thermostat.

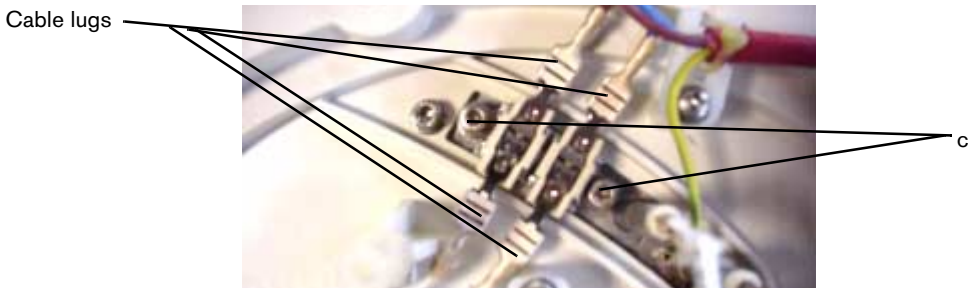

Fig. 150 Safety thermostat

15. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque is 3.5 +0.5 Nm), see Fig. 151.
16. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 151.

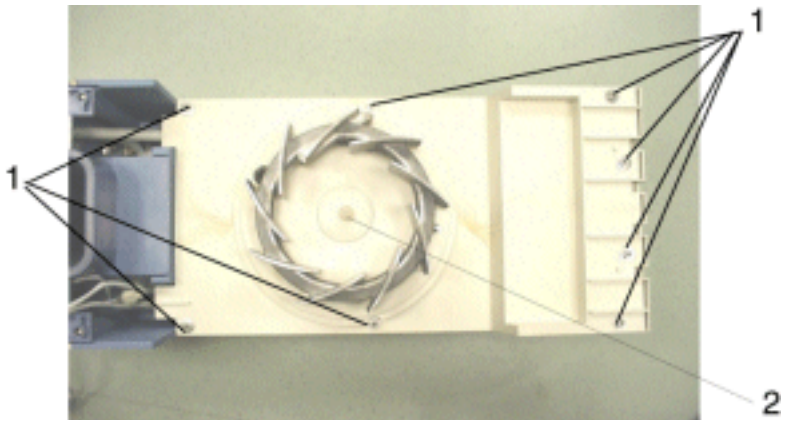

Fig. 151 Front view of the air heater

17. Fit fan wheel onto rubber sleeve of fan motor.
18. Mount aggregate housing onto basic housing, see section "5.3".
19. Plug power plug of Caleo into mains socket.
20. Switch on Caleo at ON/OFF switch.
21. Check the Caleo, see the Test Certificate, sections "Electrical safety" and "Functional tests".
22. Switch off Caleo at ON/OFF switch.

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5.4.3 WT2 Hallsensor PCB

General information about the WT2 Hallsensor PCB

In case of repair, replace complete WT2 Hallsensor PCB.

Checking WT Hallsensor PCB using DrägerService mode

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Check Hallsensor, see DrägerService mode "Diagnosis", section "Actuator PCB".

Magnets on fan wheel must be present and fan wheel must be plugged in.

Replacing the WT2 Hallsensor PCB

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Swing aggregate housing open, see section "5.1".
4. Remove aggregate housing from basic unit, see section "5.2".
5. Take off fan wheel.
6. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 152.
7. Remove screws and washers (1), see Fig. 152.
8. Remove air heater from aggregate housing.

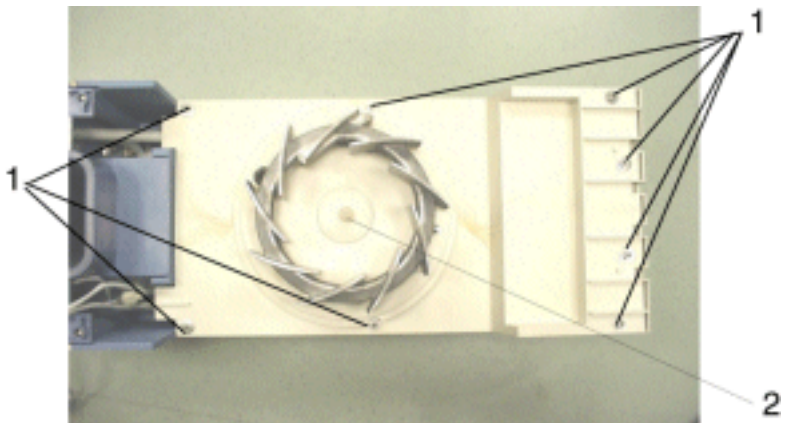

Fig. 152 Front view of the air heater

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9. Turn air heater over (stator down).
10. Disconnect rubber sleeves, see the following Figure.
11. Cut cable tie (b) carefully and dispose of according to local waste disposal regulations.
12. Remove screws, spring washers, and washers (c) of AMP connector.

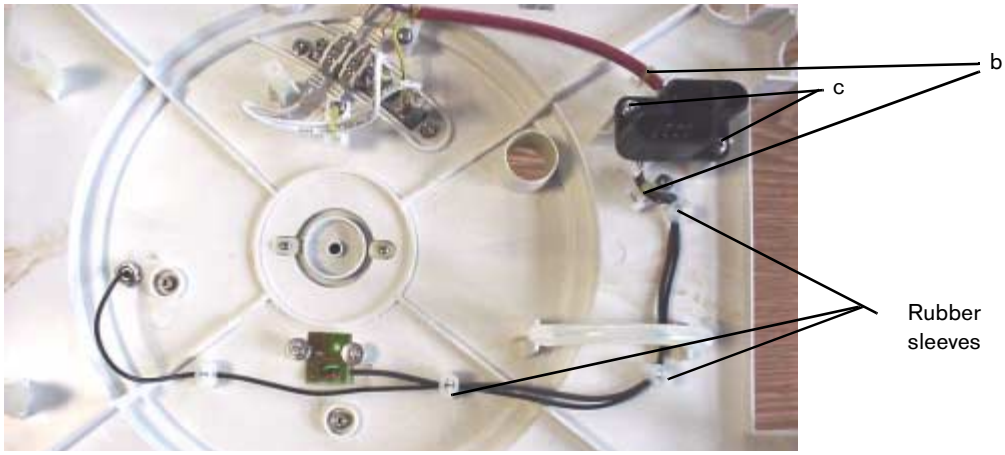

Fig. 153 Cable tie and rubber sleeve

13. Remove screws and washers (d).
14. Pull leads (e) out of plastic pins.

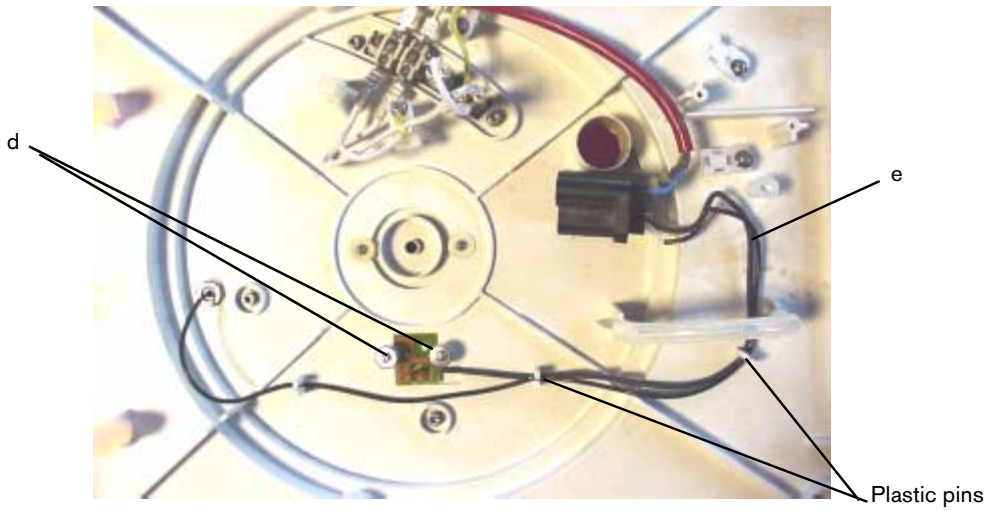

Fig. 154 WT2 Hallsensor PCB

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15. Use pin ejector (79 00 225) to eject pins of WT2 Hallsensor PCB from interlock of AMP connector.

Fig. 155 AMP connector

16. Dispose of faulty WT2 Hallsensor PCB according to local waste disposal regulations.
17. Insert pins of new WT2 Hallsensor PCB into AMP connector (pay attention to color coding) until pins engage securely in interlock of AMP connector.

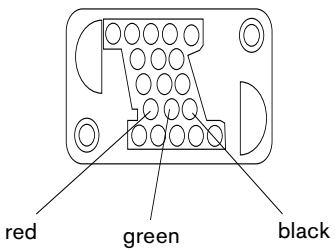

Fig. 156 AMP connector, color coding

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18. Place leads (f) between plastic pins.
19. Secure WT2 Hallsensor PCB using screws and washers (g).

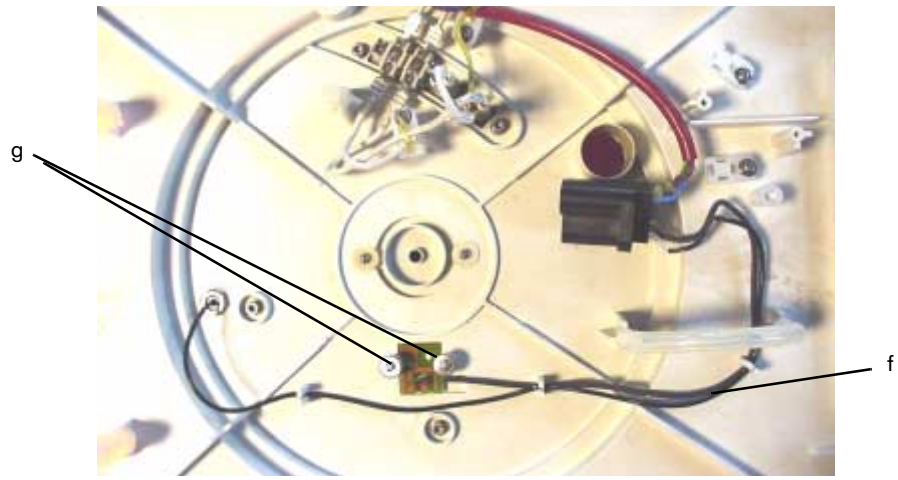

Fig. 157 WT2 Hallsensor PCB

20. Plug rubber sleeve onto plastic pins, see the following Figure.
21. Secure AMP connector using screws, spring washers, and washers (h).
22. Fasten leads with cable ties (i).
23. Cut off any protruding length of cable ties and dispose of according to local waste disposal regulations.

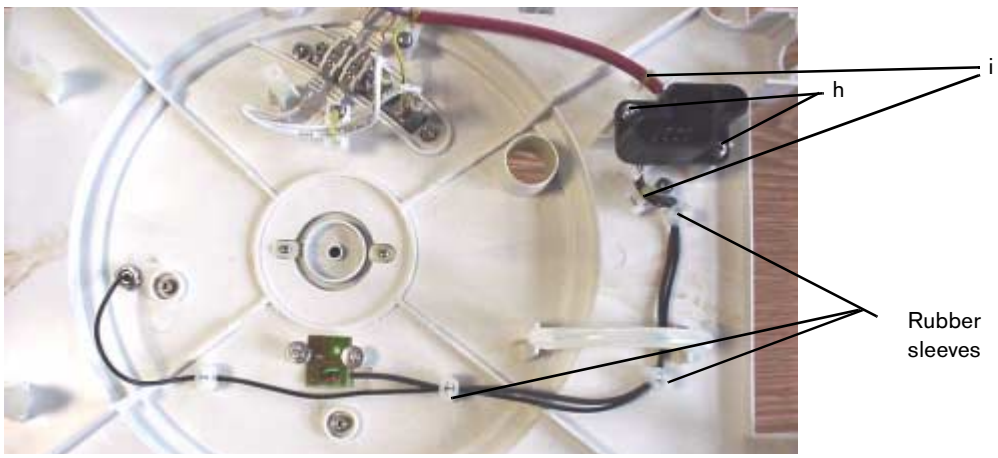

Fig. 158 Cable tie and rubber sleeve

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24. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 159.
25. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 159.

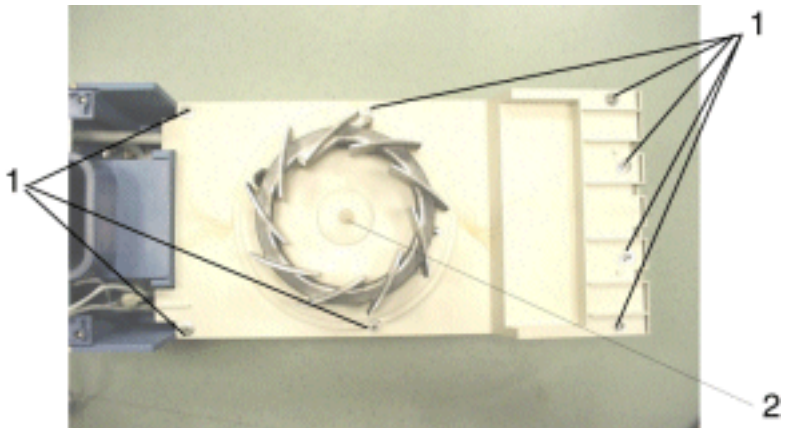

Fig. 159 Air heater

26. Fit fan wheel onto rubber sleeve of fan motor.
27. Mount aggregate housing onto basic housing, see section "5.3".
28. Plug power plug of Caleo into mains socket.
29. Switch on Caleo at ON/OFF switch.
30. Check the Caleo, see the Test Certificate, sections "Electrical safety" and "Functional tests".
31. Switch off Caleo at ON/OFF switch.

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5.4.4 Temperature sensor

General information about the temperature sensor

In case of repair, replace complete temperature sensor.

Checking the temperature sensor in the DrägerService mode

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Check temperature sensor, see DrägerService mode "Diagnosis", section "Actuator PCB".

Replacing the temperature sensor

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Swing aggregate housing open, see section "5.1".
4. Remove aggregate housing from basic unit, see section "5.2".
5. Take off fan wheel.
6. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 160.
7. Remove screws and washers (1), see Fig. 160.
8. Remove air heater from aggregate housing.

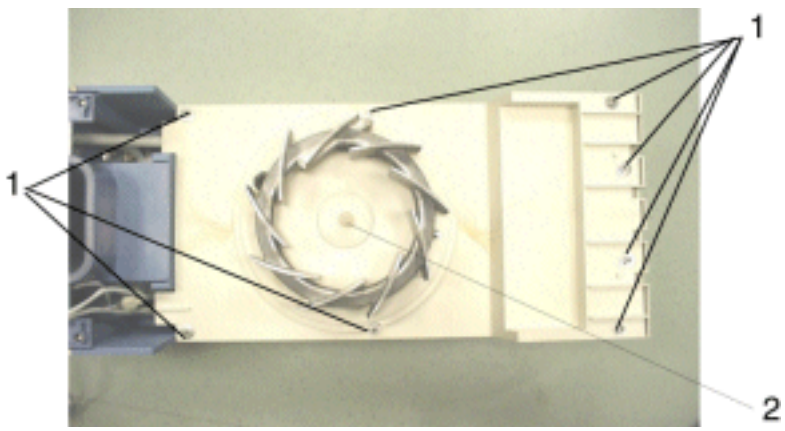

Fig. 160 Front view of the air heater

9. Turn air heater over (stator down).

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10. Disconnect rubber sleeves, see the following Figure.
11. Cut cable tie (b) carefully and dispose of according to local waste disposal regulations.
12. Remove screws, spring washers, and washers (c).

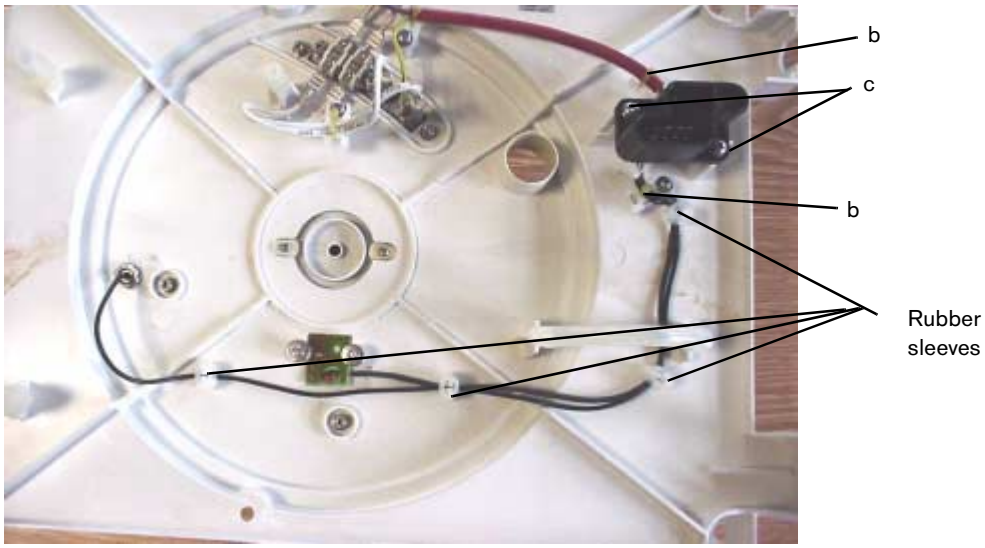

Fig. 161 Air heater (dismounted)

13. Remove nut (d) from temperature sensor.
14. Carefully pull leads (e) out of plastic pins.

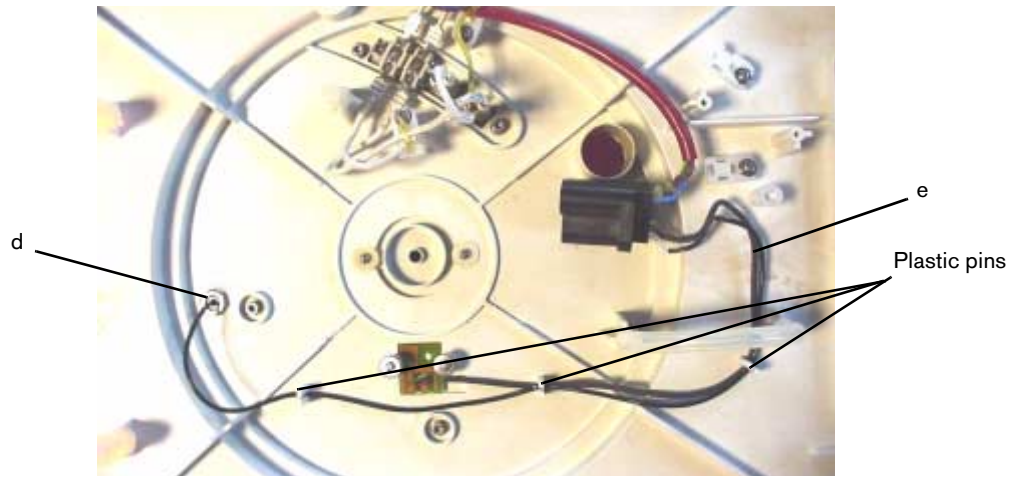

Fig. 162 Air heater (dismounted)

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15. Use pin ejector (79 00 225) to eject pins of faulty temperature sensor from interlock of AMP connector.

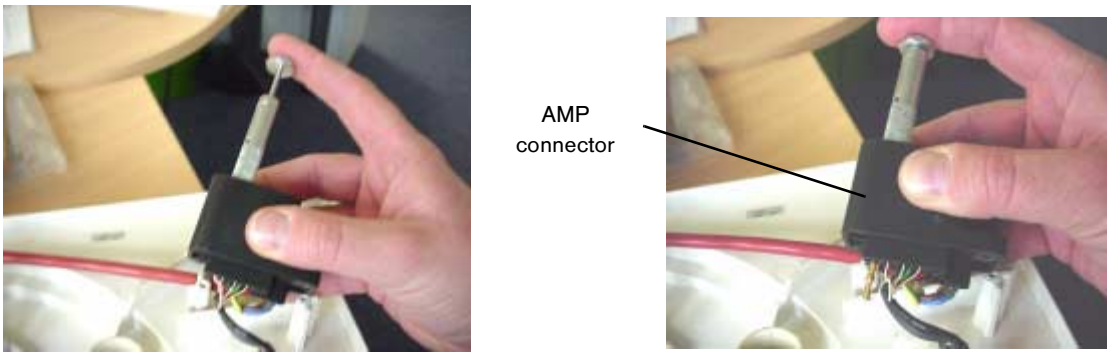

Fig. 163 AMP connector

16. Remove nut from faulty temperature sensor.
17. Dispose of faulty temperature sensor according to local waste disposal regulations.
18. Remove silicone residues on plastic plate at fitting location of temperature sensor.
19. Insert lead of new temperature sensor from above through inlet on plastic plate.
20. Remove silicone residues from nut.

The plastic plate may break near the temperature sensor if too much force is used to tighten the nut of the temperature sensor. Do not use too much force when tightening the nut.

21. Carefully secure temperature sensor to plastic plate using nut.
22. Secure one side of nut at connection between nut and plastic plate using, for example, silicone "Elastosil E41 transparent".
23. Insert pins of new temperature sensor into AMP connector (pay attention to color coding ring and correct fitting position) until pins engage in interlock of AMP connector (Note: Three pins have a color ring, one pin has none).

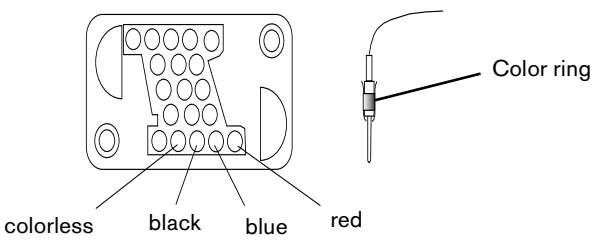

Fig. 164 Rear view of AMP connector

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24. Place leads between plastic pins (f).

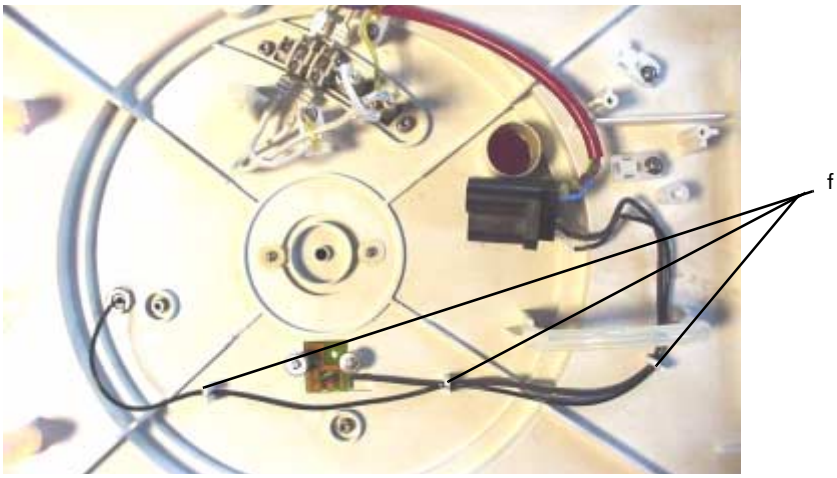

Fig. 165 Air heater (dismounted)

25. Plug rubber sleeves (g) onto plastic pins, see the following Figure.
26. Secure AMP connector using screws, spring washers, and washers (h).
27. Attach leads to retaining points (i) using cable ties, cut protruding length of cable ties and dispose of according to local waste disposal regulations.

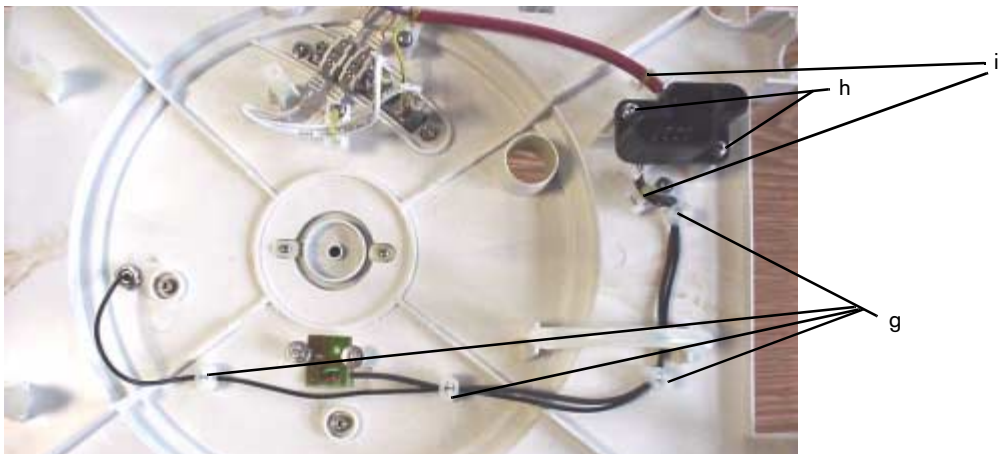

Fig. 166 Air heater (dismounted)

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28. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 167.
29. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 167.

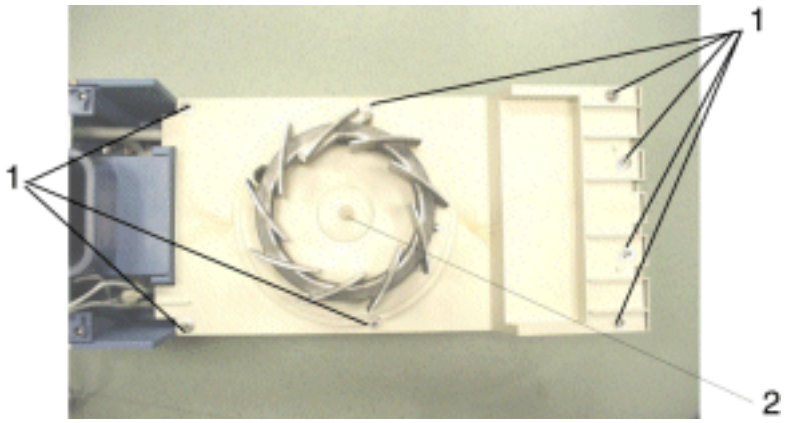

Fig. 167 Front view of the air heater

30. Fit fan wheel onto rubber sleeve of fan motor.
31. Mount aggregate housing onto basic housing, see section "5.3".
32. Plug power plug of Caleo into mains socket.
33. Switch on Caleo at ON/OFF switch.
34. Check the Caleo, see the Test Certificate, sections "Electrical safety" and "Functional tests".
35. Switch off Caleo at ON/OFF switch.

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5.5 Toroidal transformer

5.5.1 General information about the toroidal transformer

In case of repair, replace complete toroidal transformer.

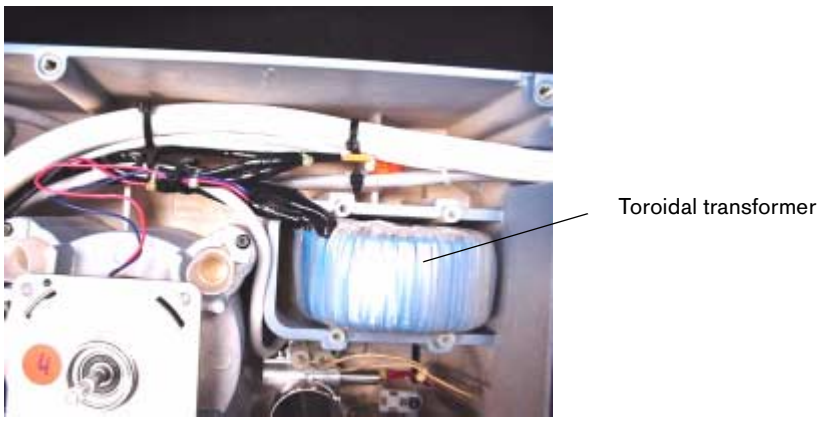

Fig. 168 View of aggregate housing (open)

5.5.2 Checking the toroidal transformer in the DrägerService mode

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Check toroidal transformer, see DrägerService Mode, chapter "Diagnosis", section "Operating voltages".

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5.5.3 Replacing the toroidal transformer

1. Swing aggregate housing open, see section "5.1".
2. Remove aggregate housing from basic housing, see section "5.2".
3. Take off fan wheel.

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

4. Create ESD conditions.
5. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 169.
6. Remove screws and washers (1), see Fig. 169.
7. Remove air heater from aggregate housing and put aside.

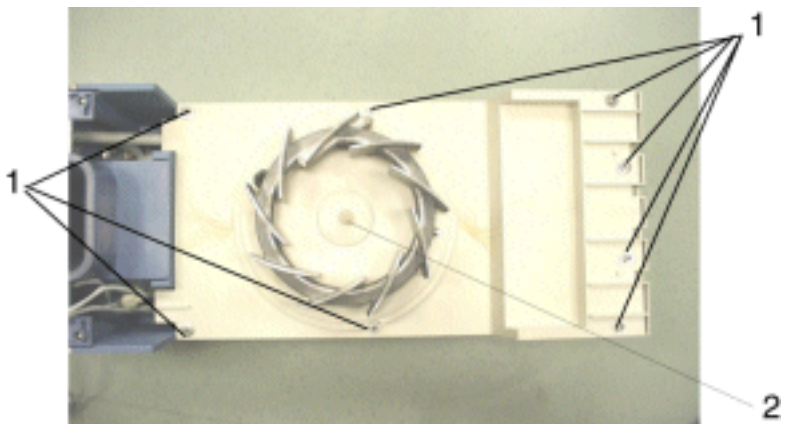

Fig. 169 Front view of the air heater

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8. Carefully cut (b) cable ties that hold cables of toroidal transformer.
9. Dispose of cut cable ties according to local waste disposal regulations.

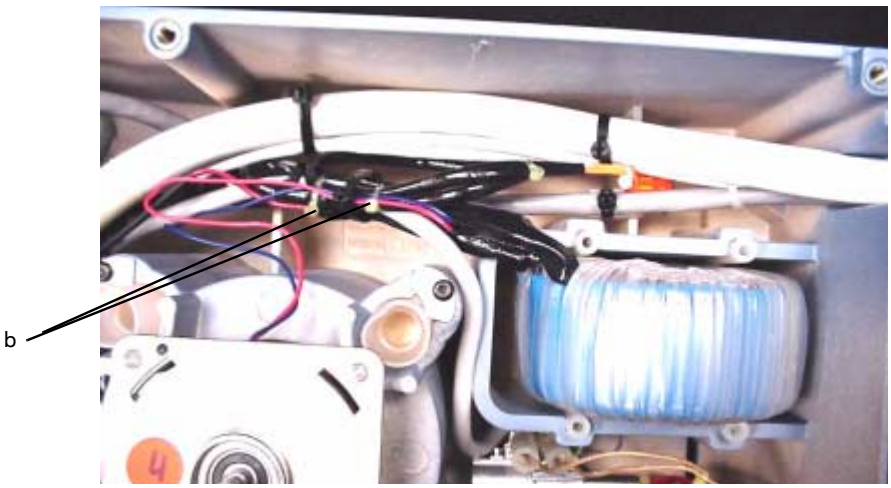

Fig. 170 Cable tie

10. Carefully cut cable ties (c).
11. Dispose of cable ties according to local waste disposal regulations.

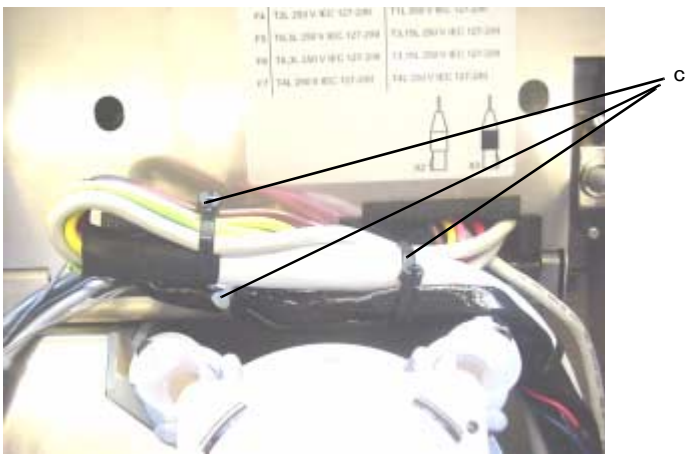

Fig. 171 Cable tie

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12. Carefully cut cable tie (d) that hold cables of toroidal transformer and dispose of according to local waste disposal regulations.

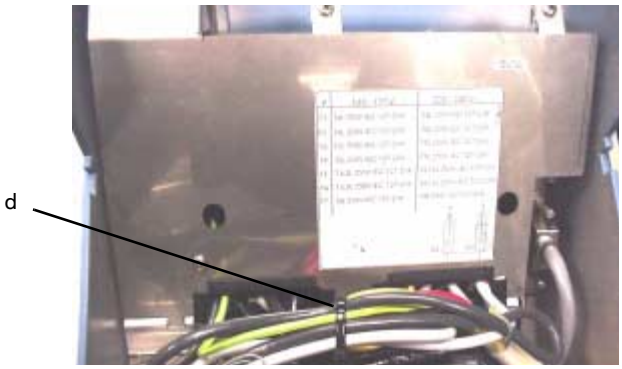

Fig. 172 Cable tie

13. Remove screws and washers (e).

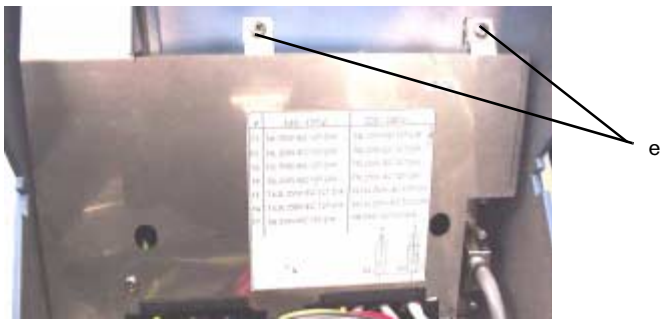

Fig. 173 View of the E-box

14. Lift housing cover of E-box a little and remove cable lug of protective earth conductor.
15. Put housing cover of E-box aside.

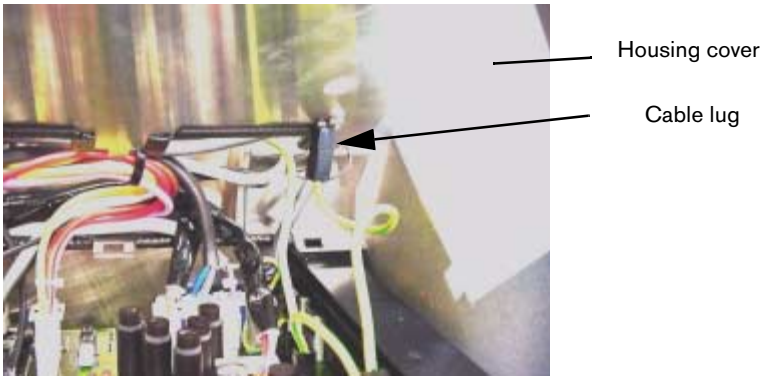

Fig. 174 Protective earth conductor

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16. Disconnect cable connector from WT2 Actuator PCB, see the following Figure.
17. Remove faulty toroidal transformer and dispose of according to local waste disposal regulations.
18. Place new toroidal transformer into aggregate housing.
19. Plug toroidal transformer cable connectors onto the WT2 Actuator PCB.

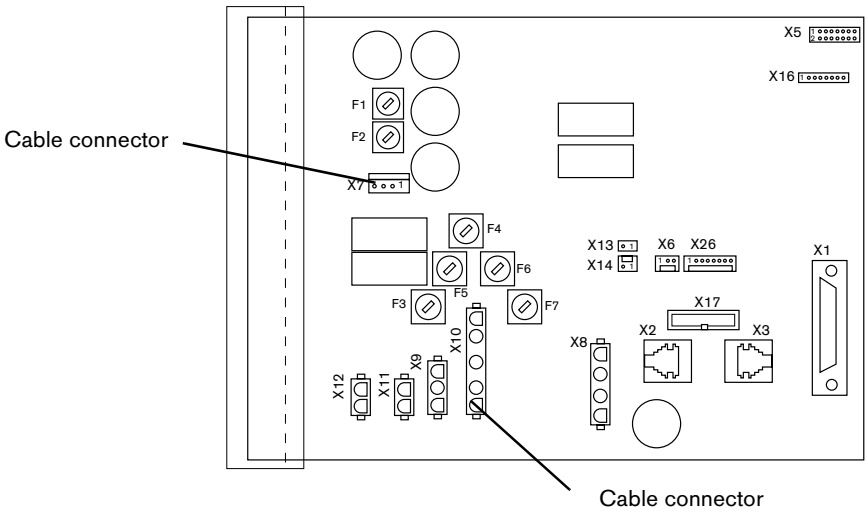

Fig. 175 WT2 Actuator PCB

20. Push housing cover into guides of E-box housing and plug cable lug of protective earth conductor onto plug-in socket on housing cover.

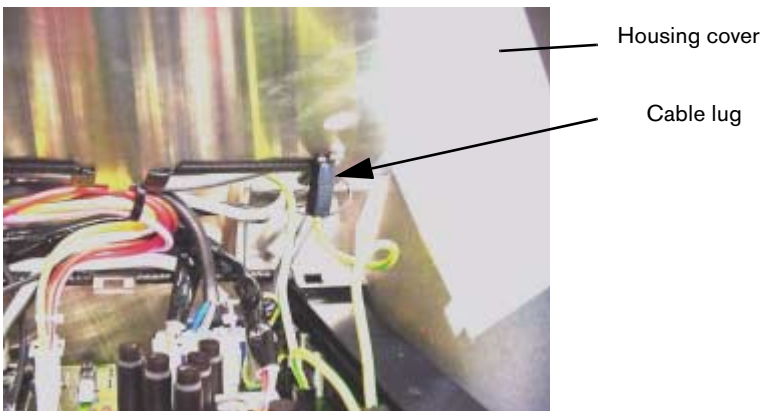

Fig. 176 Protective earth conductor

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21. Secure E-box cover using screws and washers (f).

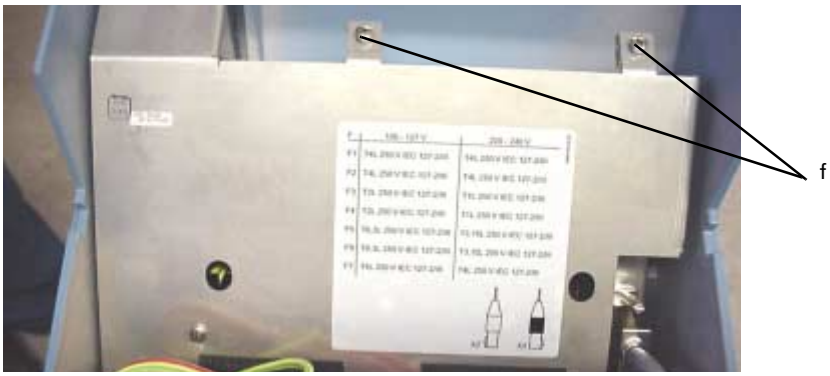

Fig. 177 E-box

22. Put cable harness in place and attach with cable ties.
23. Cut off any protruding length of cable ties and dispose of according to local waste disposal regulations.

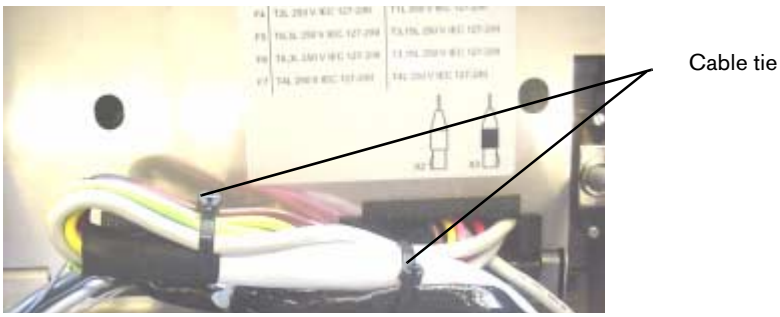

Fig. 178 Cable tie

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24. Put cable harness in place and attach with cable ties.
25. Cut off any protruding length of cable ties and dispose of according to local waste disposal regulations.

Fig. 179 Cable tie

26. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque is 3.5 +0.5 Nm), see Fig. 180.
27. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 180.

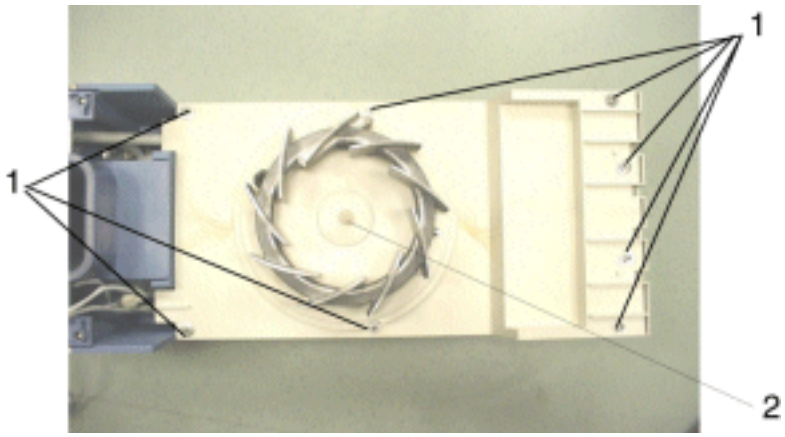

Fig. 180 Front view of the air heater

28. Fit fan wheel onto rubber sleeve of fan motor.
29. Mount aggregate housing onto basic housing, see section "5.3".
30. Plug power plug of Caleo into mains socket.
31. Switch on Caleo at ON/OFF switch.
32. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
33. Switch off Caleo at ON/OFF switch.

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5.6 Water boiler (optional)

5.6.1 General information about the water boiler

In case of repair, replace complete water boiler.

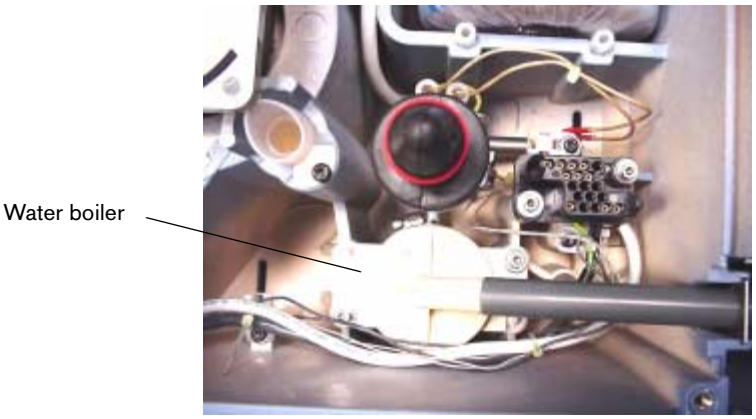

Fig. 181 Water boiler

5.6.2 Checking the water boiler during normal operation

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Activate "humidity control" function (optional)
6. Adjust humidity target value.

Humidity actual value should reach target value.

7. Activate "humidity control" function.
8. Set humidity target value to level 10.

Canopy should steam up after approx. 25 minutes.

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5.6.3 Checking the water boiler using the DrägerService mode

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Check water boiler, see DrägerService Mode, chapter "Diagnosis", section "Output signals/Digital signals".

5.6.4 Replacing the sealing rings in the water boiler

Replace the used sealing rings of the water boiler at specified intervals. Refer to the Test Certificate for sealing ring replacement intervals.

1. Swing aggregate housing out of basic unit, see section "5.1".
2. Remove aggregate housing from basic housing, see section "5.2".
3. Take off fan wheel.
4. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 182.
5. Remove screws and washers (1), see Fig. 182.
6. Remove stator/heating element assembly from aggregate housing and put aside.

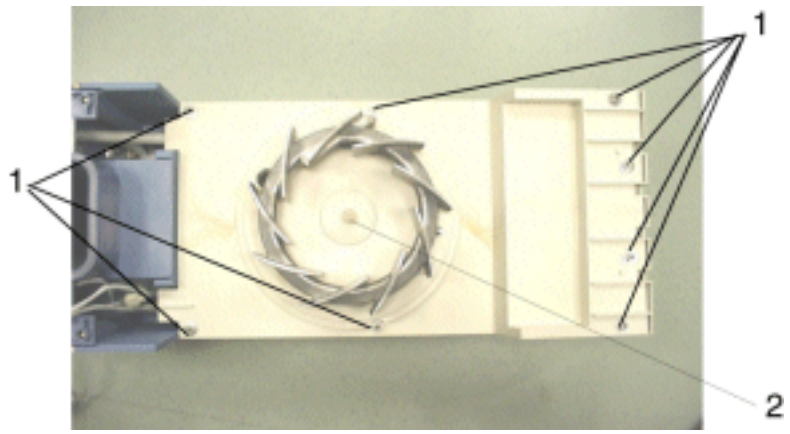

Fig. 182 Front view of the air heater

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7. Remove screws, spring washers, and washers (b).

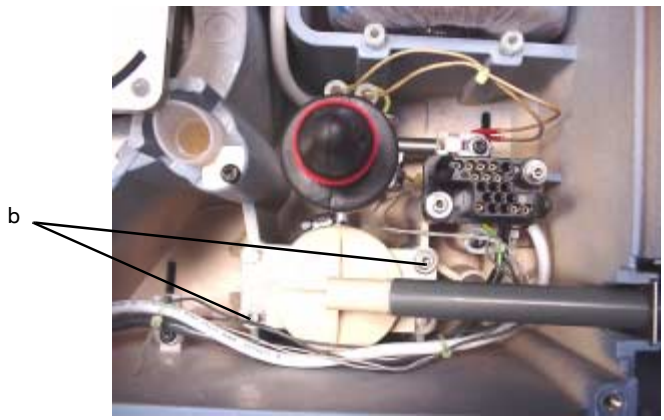

Fig. 183 Attachment of the water boiler

8. Remove water boiler from aggregate housing and place onto aggregate housing.
9. Loosen screw (c) of host clamp.
10. Carefully lift housing cover of water boiler.

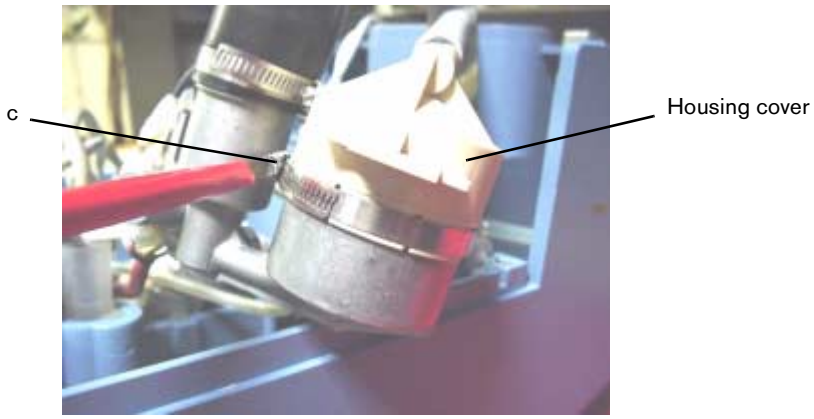

Fig. 184 Water boiler

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11. Remove sealing rings and dispose of according to local waste disposal regulations.
12. Fit new sealing rings.

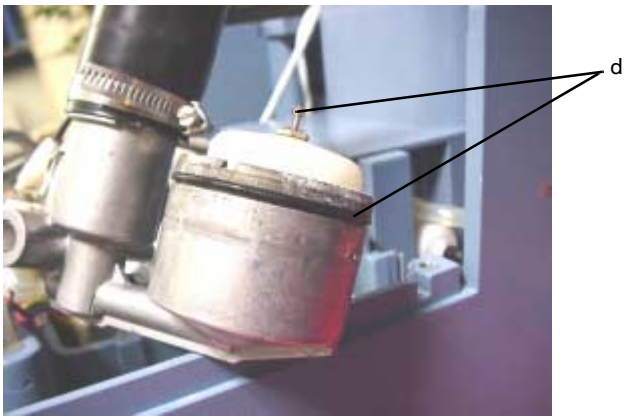

Fig. 185 Water boiler (open)

13. Push housing cover onto water boiler and secure to water boiler using hose clamp (e) (**Note: Pay attention to preferred position of housing cover, position hose clamp as shown in Figure, and tighten screw only to such extend that housing cover cannot slip**).

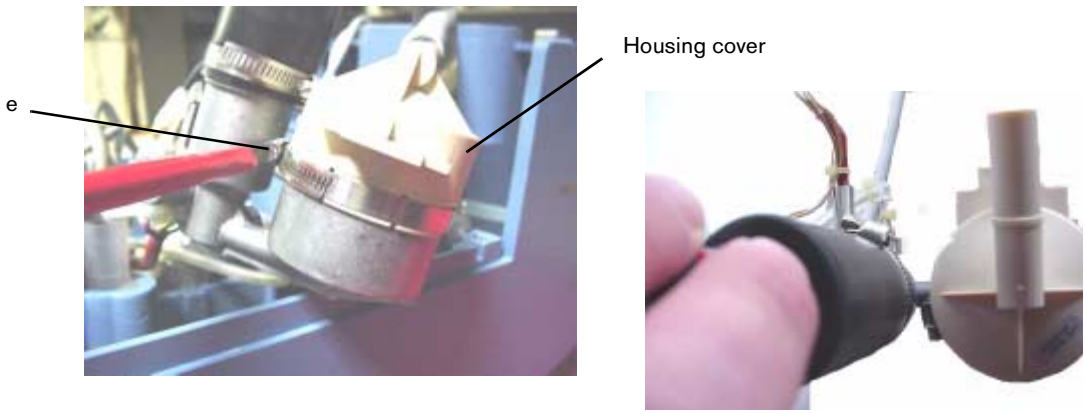

Fig. 186 View of the water boiler

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14. Remove sealing ring (f) and dispose of according to local waste disposal regulations.
15. Fit new sealing ring (f).

Fig. 187 Sealing ring of the water boiler

16. Place water boiler into aggregate housing (**pay attention to position of lines and hoses**), see the following Figure, (**Note: Two small lines are located in recess underneath positioning plate; vent hose must be in provided hole.**).
17. Secure water boiler to aggregate housing using screws, spring washers, and washers (g).

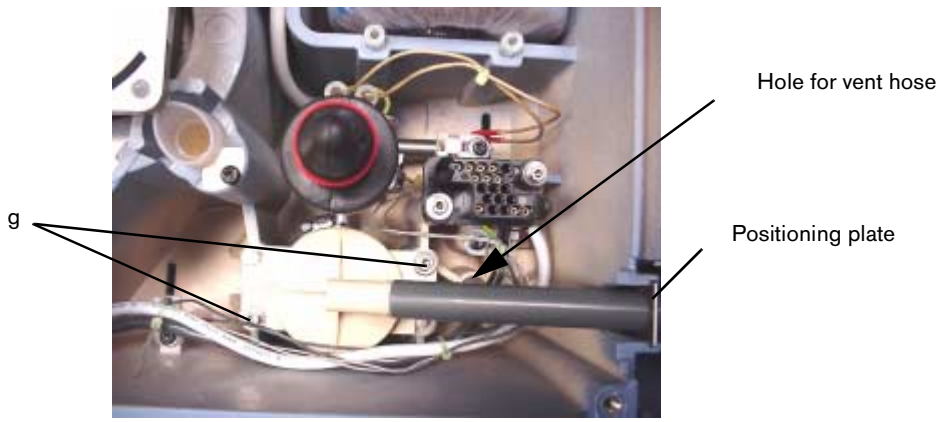

Fig. 188 Water boiler

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18. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 189.
19. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 189.

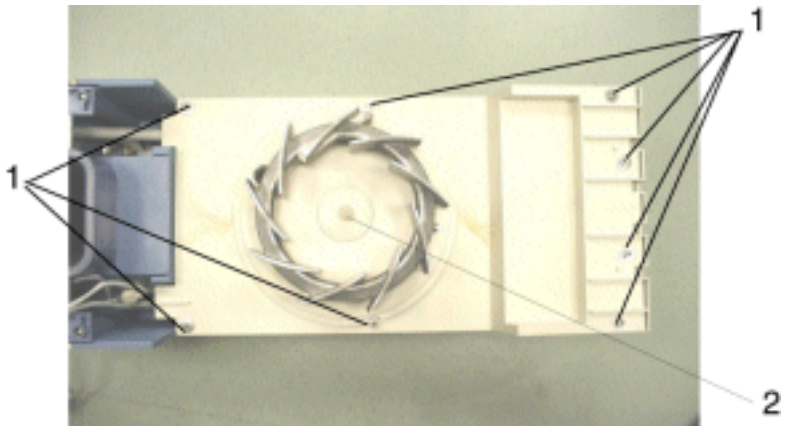

Fig. 189 Front view of the air heater

20. Fit fan wheel onto rubber sleeve of fan motor.
21. Mount aggregate housing onto basic housing, see section "5.3".
22. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
23. Switch off Caleo at ON/OFF switch.

5.6.5 Bimetal thermostat

The bimetal thermostat is activated when the water level in the water boiler is too low. The EL display shows the following error message: "No water".

Replacing the bimetal thermostat

1. Swing aggregate housing out of basic unit, see section "5.1".
2. Remove aggregate housing from basic unit, see section "5.2".
3. Take off fan wheel.

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4. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 190.
5. Remove screws and washers (1), see Fig. 190.
6. Remove stator/heating element assembly from aggregate housing and put aside.

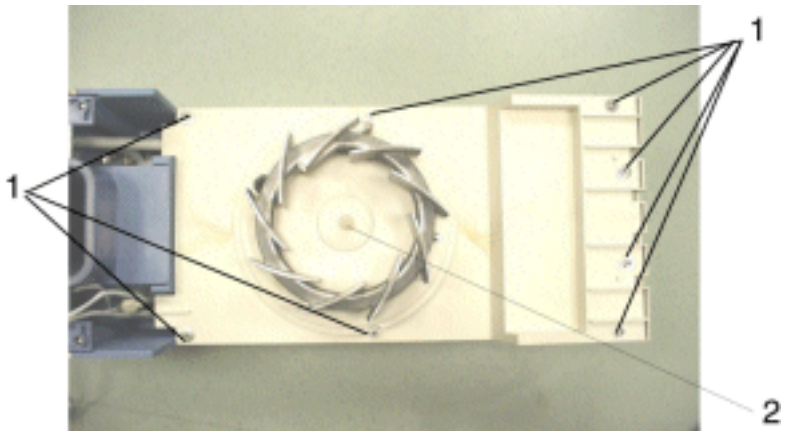

Fig. 190 Front view of the air heater

7. Remove screws, spring washers, and washers (b).

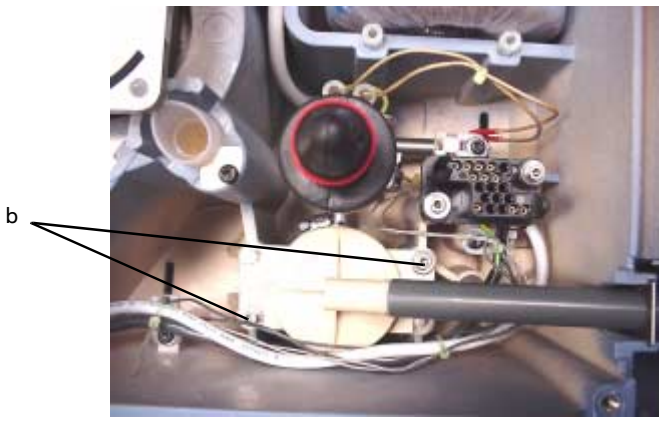

Fig. 191 Water boiler

8. Carefully cut cable ties that hold cable of bimetal thermostat.
9. Dispose of cut cable ties according to local waste disposal regulations.

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10. Remove screws and washers (c).

Fig. 192 E-box

11. Lift housing cover a little and remove cable lug of protective earth conductor.
12. Put housing cover aside.

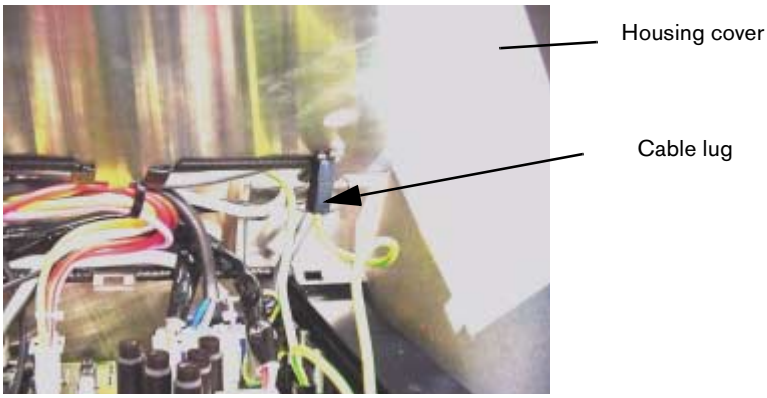

Fig. 193 Protective earth conductor

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13. Disconnect cable connector from WT2 Actuator PCB.

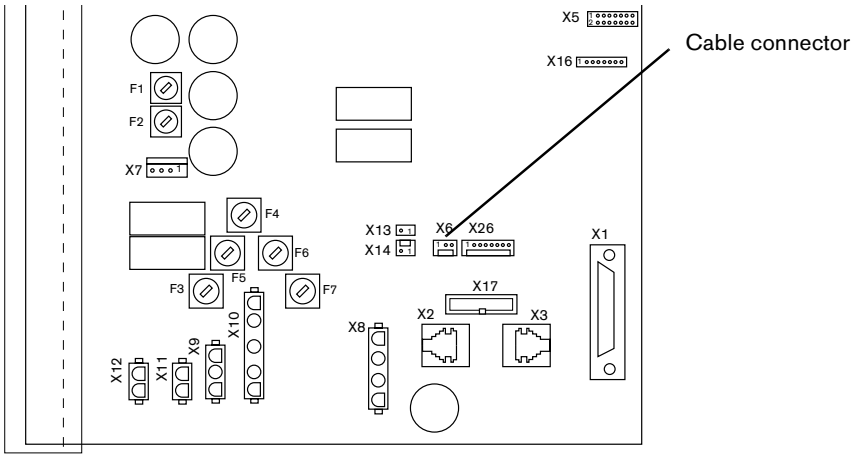

Fig. 194 WT2 Actuator PCB

14. Remove water boiler from aggregate housing and place onto aggregate housing.
15. Unscrew faulty bimetal thermostat counter-clockwise from water boiler, preferably by using plastic-jaw pliers, see the following Figure.
16. Dispose of faulty bimetal thermostat according to local waste disposal regulations.

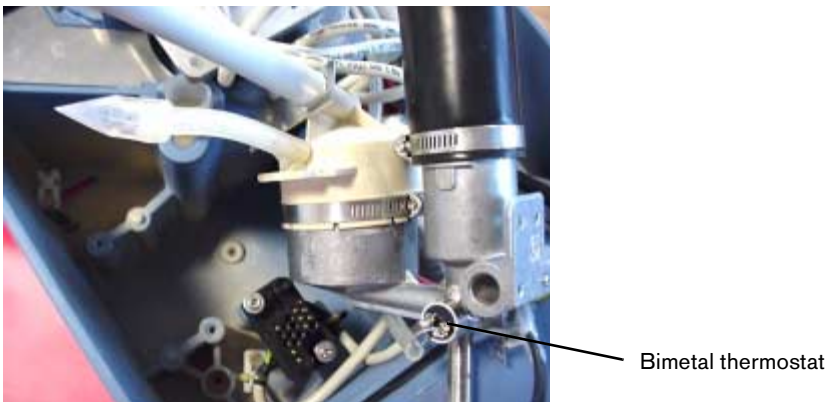

Fig. 195 Water boiler

17. Screw new bimetal thermostat clockwise into water boiler, preferably by using plastic-jaw pliers.

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18. Place water boiler into aggregate housing (**pay attention to position of lines and hoses**), see the following Figure, (**Notes: Two small lines that lead to pneumatic O2 control must be in the recess underneath the positioning plate; the vent hose must be in the provided hole.)**.

19. Secure water boiler to aggregate housing using screws, spring washers, and washers (d).

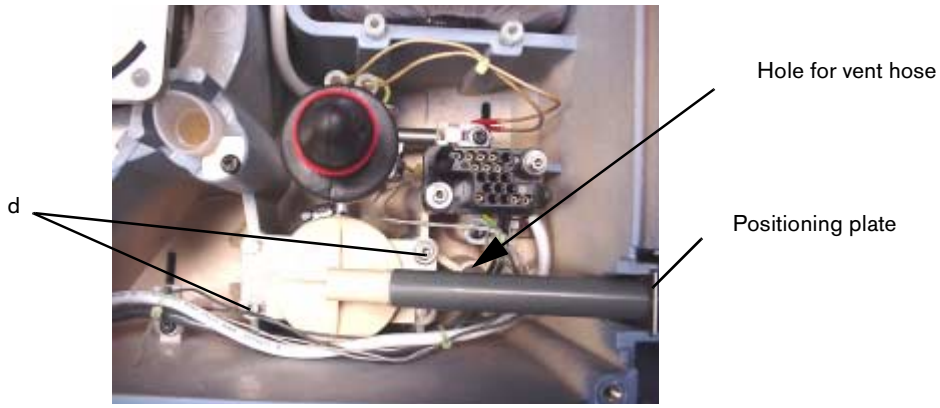

Fig. 196 Water boiler

20. Plug cable connector into the plug-in socket of WT2 Actuator PCB.

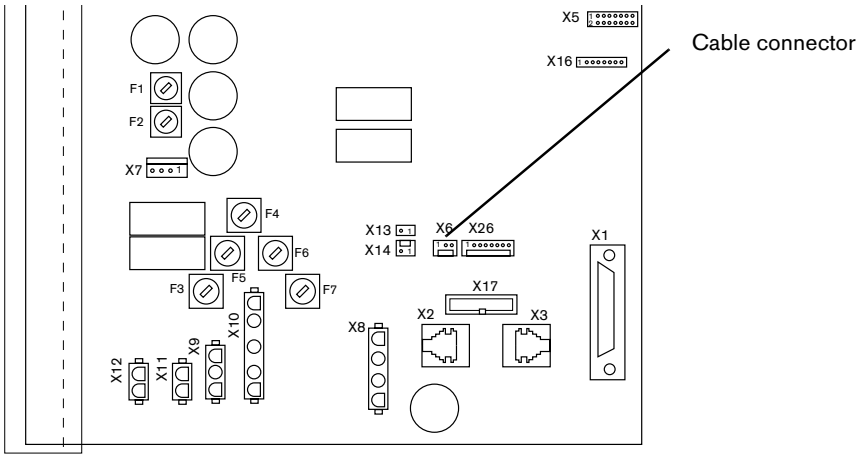

Fig. 197 Detail of the WT2 Actuator PCB

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21. Push housing cover into guides of housing and plug cable lug onto plug-in socket on housing cover.

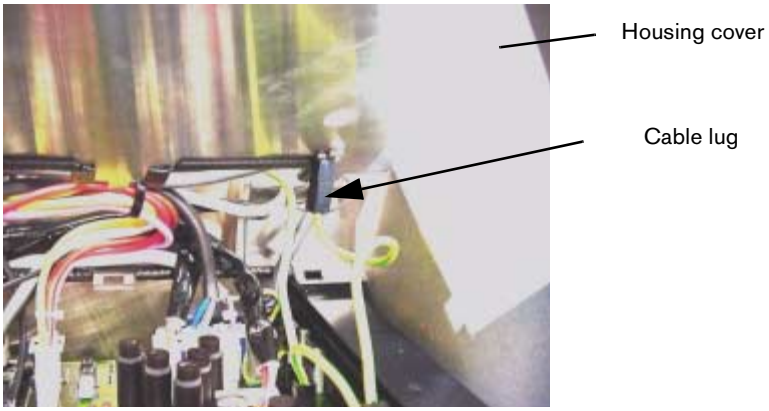

Fig. 198 Protective earth conductor

22. Push housing cover with slots into recesses on the E-box housing and secure housing cover to E-box using screws and washers (e).

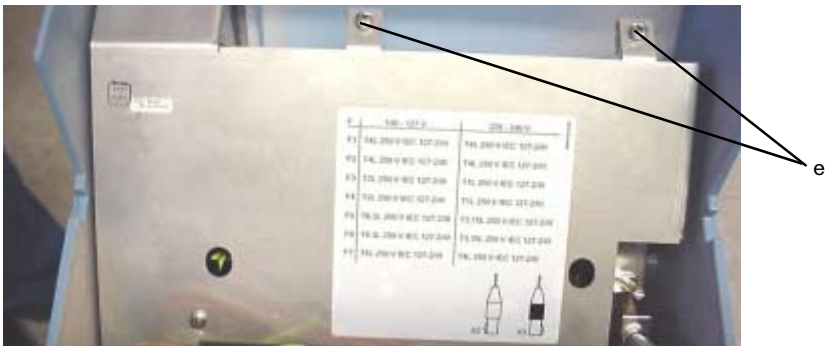

Fig. 199 E-box

23. Re-attach cables of bimetal thermostat to cable harness using cable ties.

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24. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 200.
25. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 200.

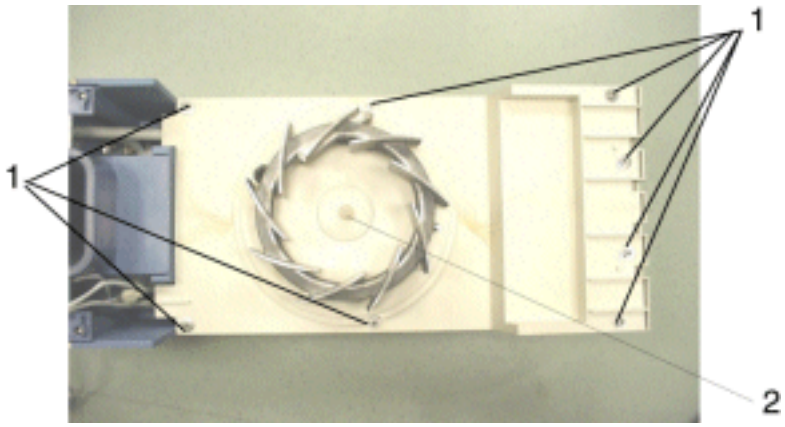

Fig.200 Front view of the air heater

26. Fit fan wheel onto rubber sleeve of fan motor.
27. Mount aggregate housing onto basic housing, see section "5.3".
28. Plug power plug of Caleo into mains socket.
29. Switch on Caleo at ON/OFF switch.
30. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
31. Switch off Caleo at ON/OFF switch.

5.6.6 Replacing the water boiler

1. Swing aggregate housing out of basic unit, see section "5.1".
2. Remove aggregate housing from basic housing, see section "5.2".
3. Take off fan wheel.

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4. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 201.
5. Remove screws and washers (1), see Fig. 201.
6. Remove stator/heating element assembly from aggregate housing and put aside.

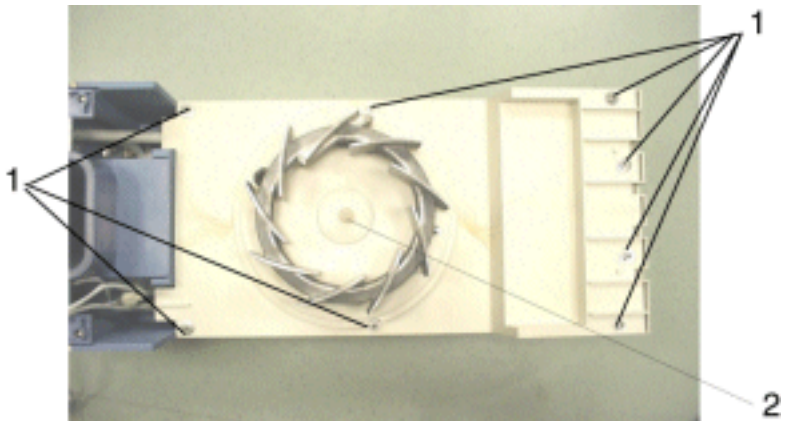

Fig.201 Front view of the air heater

7. Remove screws, spring washers, and washers (b).

Fig.202 Water boiler

8. Remove water boiler and put onto aggregate housing.

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9. Remove screws and washers (c).

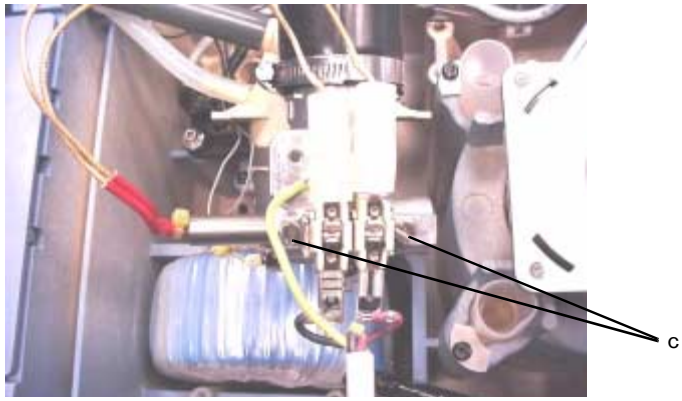

Fig.203 Attachment of the thermostat

10. Remove screw (d).

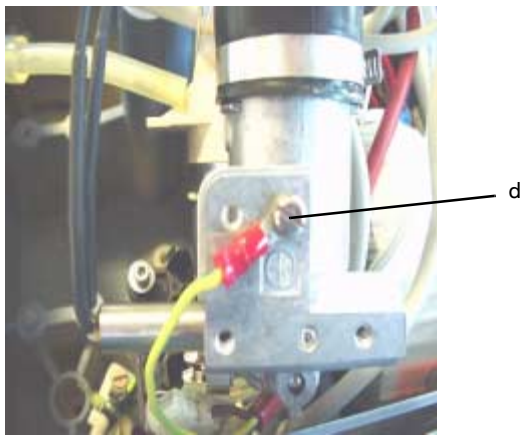

Fig.204 Attachment of the protective earth conductor

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11. Loosen screw (e) and remove heating cartridge from water boiler.

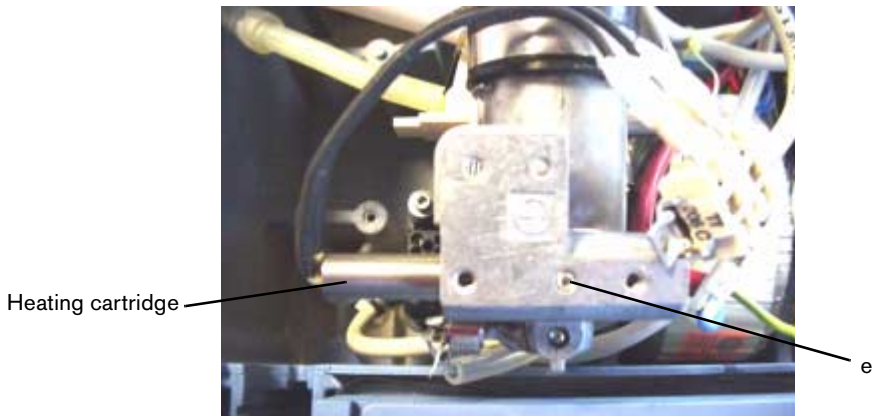

Fig.205 Attachment of the heating cartridge

12. Unscrew bimetal thermostat counter-clockwise from faulty water boiler, for example, by using plastic-jaw pliers, see the following Figure.
13. Remove tube with positioning plate from faulty water boiler and mount onto new water boiler.
14. Remove vent hose from faulty water boiler and plug onto new water boiler.
15. Dispose of faulty water boiler according to local waste disposal regulations.
16. Screw bimetal thermostat clockwise into new water boiler, preferably by using plastic-jaw pliers.

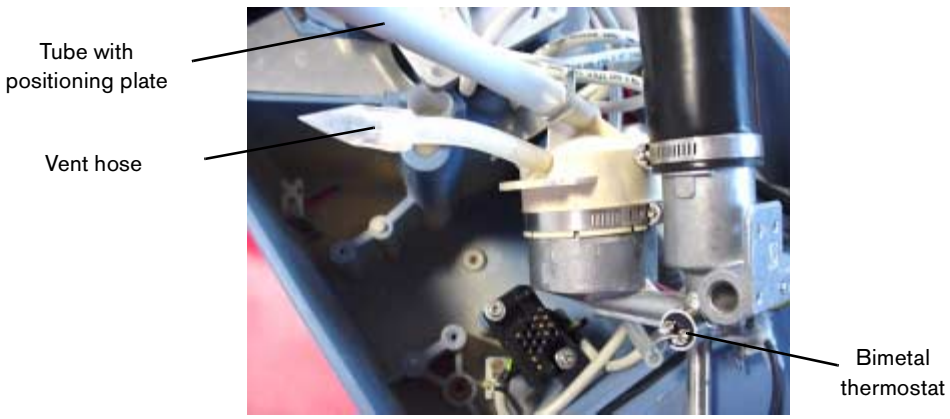

Fig.206 Water boiler

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17. Push heating cartridge into new water boiler until heating cartridge is flush with water boiler housing.
18. Secure heating cartridge with screw (f).

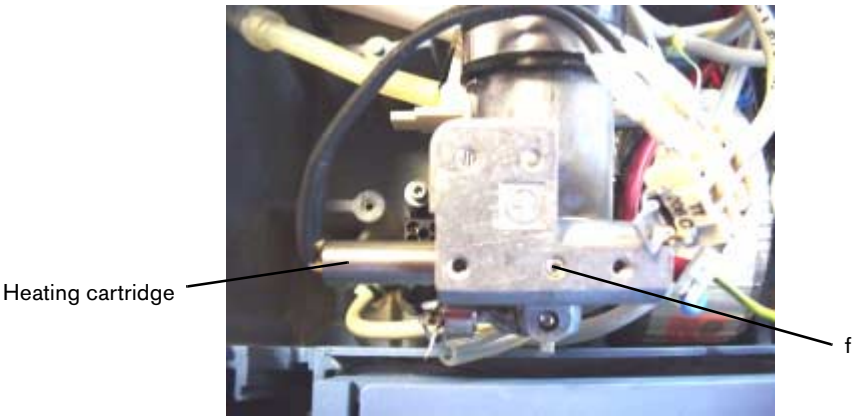

Fig.207 Attachment of the heating cartridge

19. Secure protective earth conductor to water boiler using screw (g).

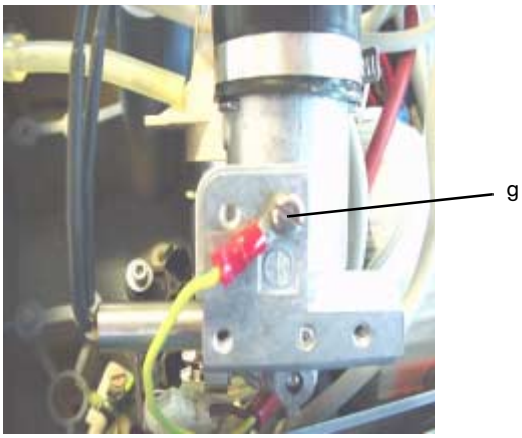

Fig.208 Attachment of the protective earth conductor

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20. Secure safety thermostats to water boiler using screws and washers (h).

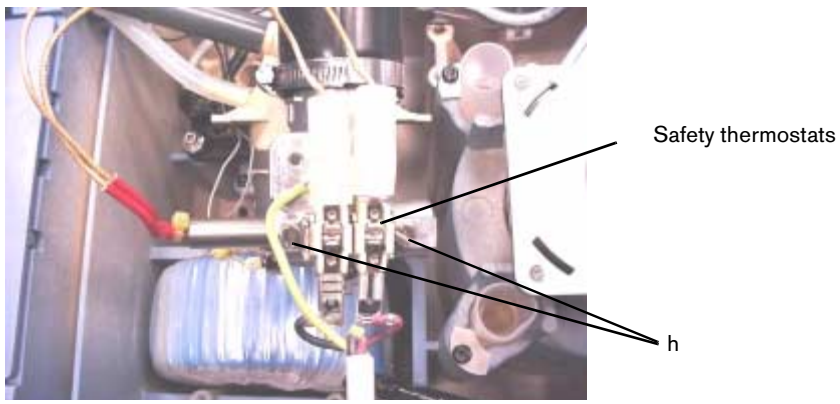

Fig.209 Safety thermostats

21. Place water boiler into aggregate housing (**pay attention to position of lines and hoses**), see the following Figure, (**Note: Two small lines are located in recess underneath positioning plate; vent hose must be in provided hole.)** .
22. Secure water boiler to aggregate housing using screws, spring washers, and washers (i).

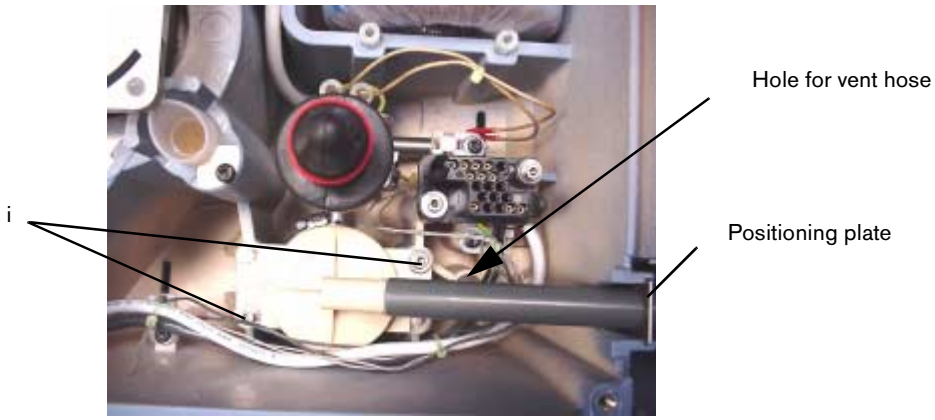

Fig. 210 Water boiler

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23. Secure air heater to aggregate housing using screws and washers (1) (The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 211.
24. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 211.

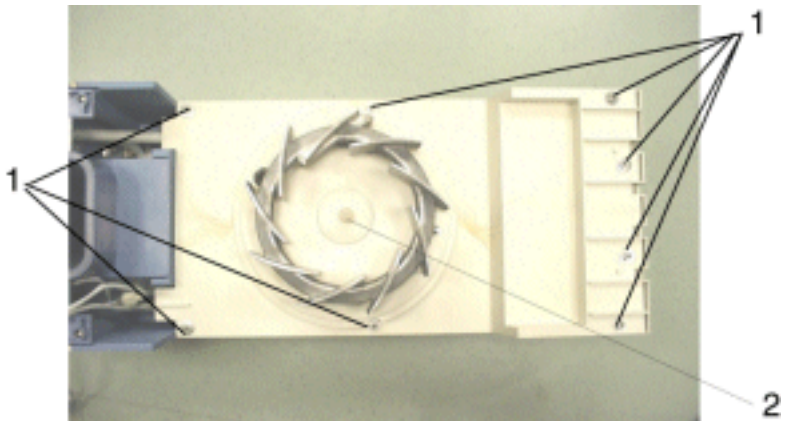

Fig. 211 Front view of the air heater

25. Fit fan wheel onto rubber sleeve of fan motor.
26. Mount aggregate housing onto basic housing, see section "5.3".
27. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
28. Switch off Caleo at ON/OFF switch.

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5.6.7 Safety thermostat of the water boiler

- In case of repair, replace complete safety thermostat.

Fig. 212 Safety thermostat

Checking the safety thermostat of the water boiler

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Swing aggregate housing open, see section "5.1".
4. Remove aggregate housing from basic unit, see section "5.2".
5. Take off fan wheel.
6. Carefully remove rubber sleeve (2) from shaft, see Fig. 213.
7. Remove screws and washers (1), see Fig. 213.
8. Remove air heater from aggregate housing and put aside.

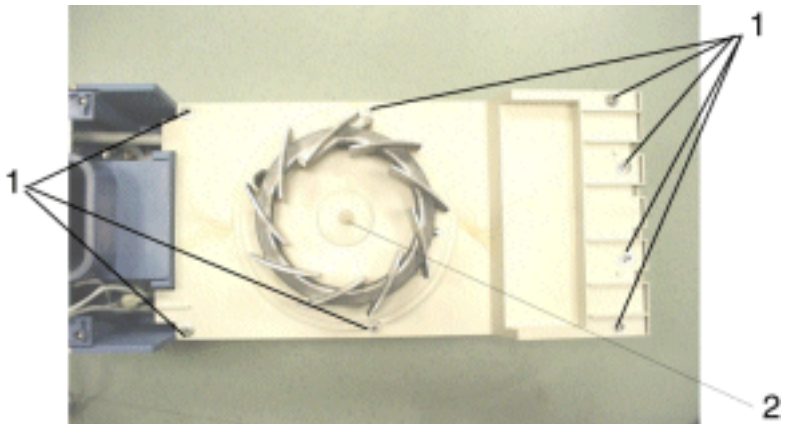

Fig. 213 Front view of the air heater

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9. Remove screws, spring washers, and washers (b).

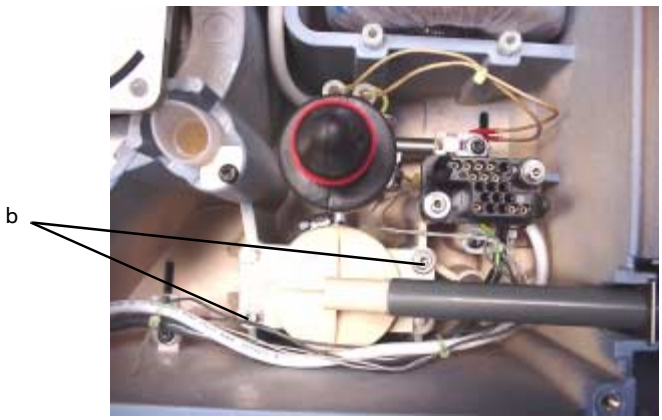

Fig. 214 Water boiler

10. Remove water boiler and put onto aggregate housing.
11. Disconnect cable lugs (c) from contacts.

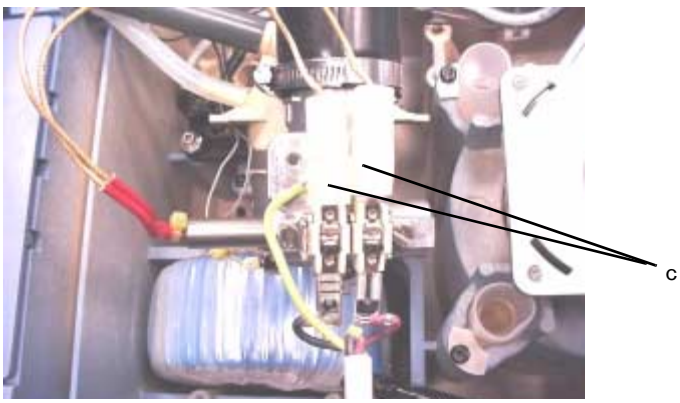

Fig. 215 Attachment of the safety thermostat

12. Measure resistance of safety thermostat using a multimeter.

If the resistance value is approx. 0 ohm, the safety thermostat is OK. If the resistance value is too high, replace the safety thermostat.

13. Plug cable lugs onto safety thermostat, see Fig. 215.

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14. Place water boiler into aggregate housing (**pay attention to position of lines and hoses**), see the following Figure, (**Note: Two small lines are located in recess underneath positioning plate; vent hose must be in provided hole.)** .
15. Secure water boiler to aggregate housing using screws, spring washers, and washers (d).

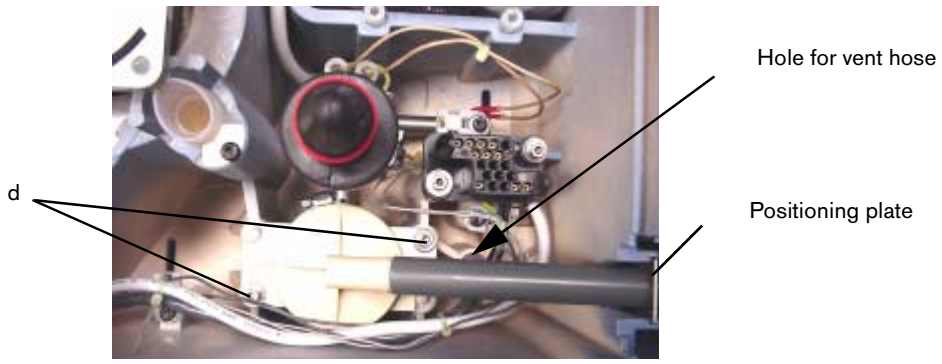

Fig. 216 Attachment of the water boiler

16. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 217.
17. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 217.

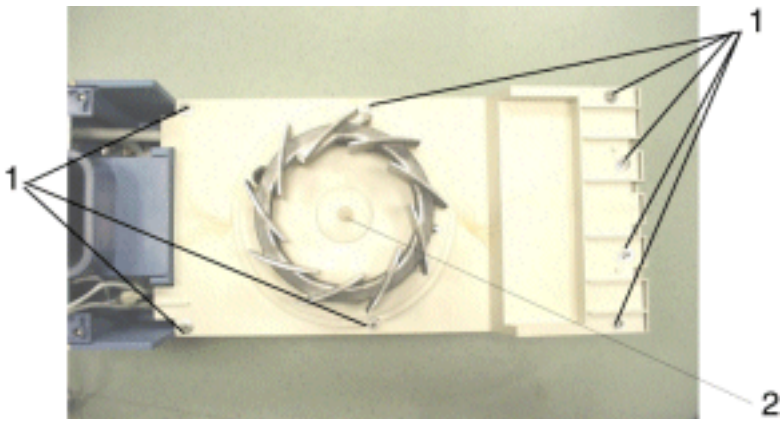

Fig. 217 Front view of the air heater

18. Fit fan wheel onto rubber sleeve of fan motor.
19. Mount aggregate housing onto basic housing, see section "5.3".
20. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
21. Switch off Caleo at ON/OFF switch.

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5.6.8 Replacing the safety thermostat

1. Swing aggregate housing open, see section "5.1".
2. Remove aggregate housing from basic unit, see section "5.2".
3. Take off fan wheel.
4. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 218.
5. Remove screws and washers (1), see Fig. 218.
6. Remove air heater from aggregate housing and put aside.

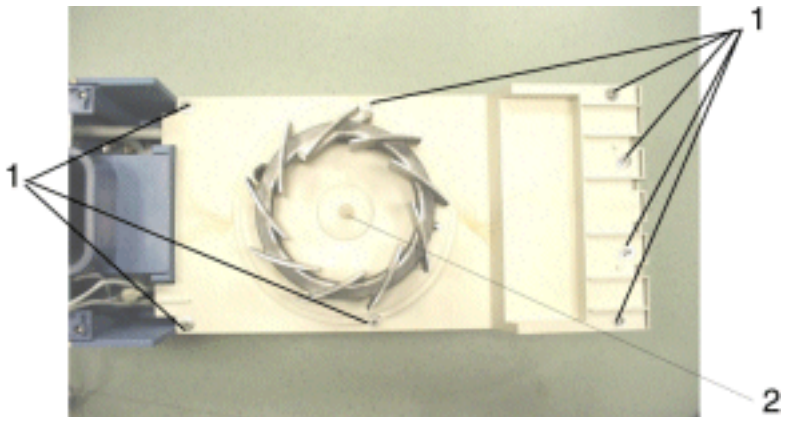

Fig. 218 Front view of the air heater

7. Remove screws, spring washers, and washers (b).

Fig. 219 Water boiler

8. Remove water boiler and put onto aggregate housing.

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9. Disconnect cable lugs (c) from contacts.
10. Remove screws and washers (d).

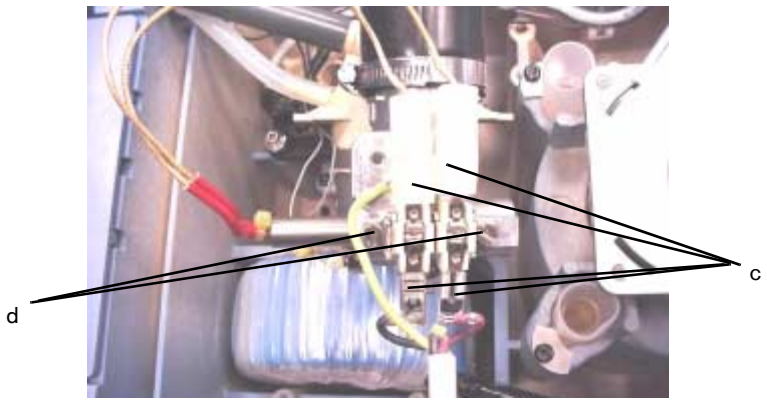

Fig.220 Attachment of the thermostat

11. Remove safety thermostat and dispose of according to local waste disposal regulations.

Fig.221 Safety thermostat

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12. Secure new safety thermostat to water boiler using screws and washers (e).
13. Plug cable lugs (f) onto contacts **(Note: Pay attention to connection of lines, see the following Figure.)**.

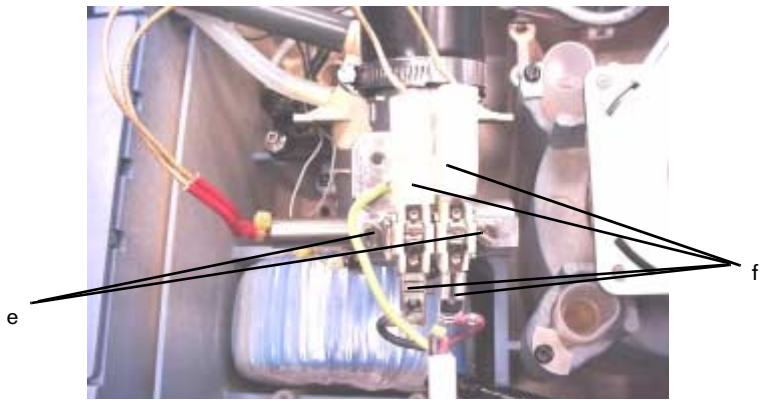

Fig.222 Safety thermostat

14. Place water boiler into aggregate housing (**pay attention to position of lines and hoses**), see the following Figure, (**Note: Two small lines are located in recess underneath positioning plate; vent hose must be in provided hole.)** .
15. Secure water boiler to aggregate housing using screws, spring washers, and washers (g).

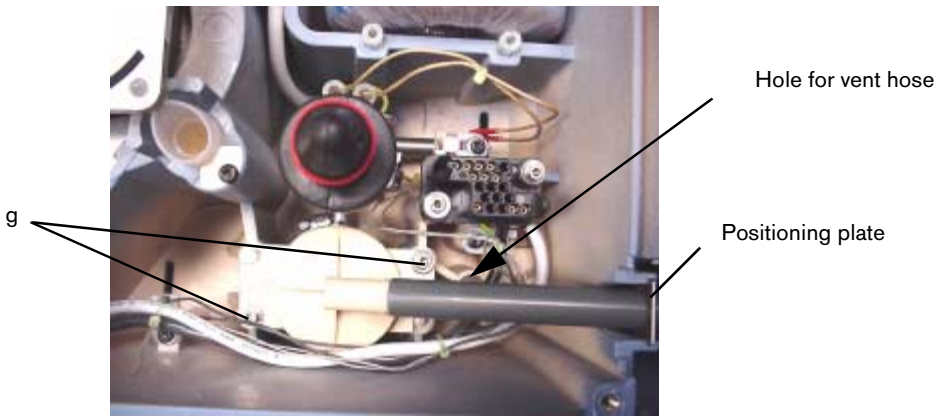

Fig.223 Water boiler

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16. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 224.
17. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 224.

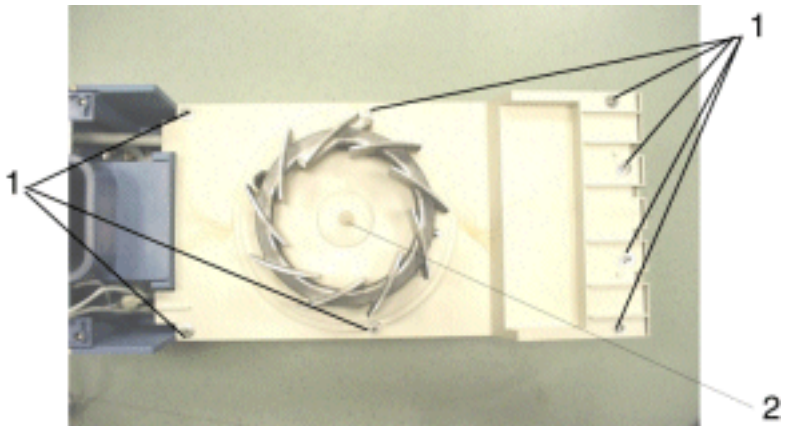

Fig.224 Front view of the air heater

18. Fit fan wheel onto rubber sleeve of fan motor.
19. Mount aggregate housing onto basic housing, see section "5.3".
20. Plug power plug of Caleo into mains socket.
21. Switch on Caleo at ON/OFF switch.
22. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
23. Switch off Caleo at ON/OFF switch.

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5.6.9 Water connecting pipe (optional)

- Replace O-ring of water connecting pipe at regular intervals (see section "Maintenance Intervals" in the Instructions for Use/Operating Instructions).

Replacing the O-ring of the water connecting pipe

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Tilt mattress tray to the left.

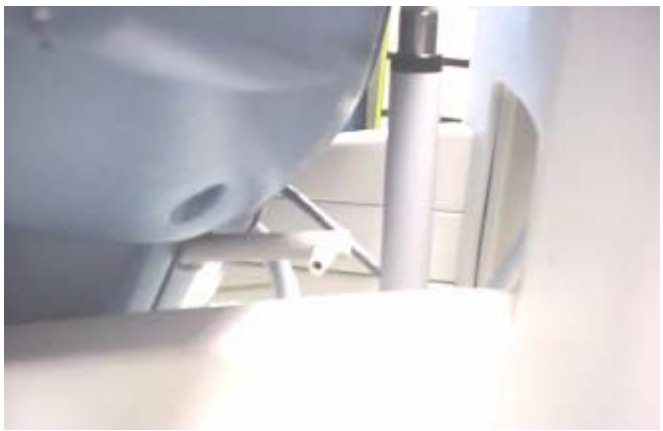

Fig.225 Mattress tray tilted

4. Turn water connecting pipe 90° upwards and pull out of Caleo.

Fig.226 Dismounting the water connecting pipe

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5. Remove old O-ring from water connecting pipe, for example, using a small screwdriver, and dispose of old O-ring according to local waste disposal regulations.

Fig.227 Water connecting pipe

6. Push new O-ring into the groove of the water connecting pipe.
7. Push the water connecting pipe (hose connector points upwards) into the Caleo, see the following Figure.
8. Turn water connecting pipe 90° downwards.

The water connecting pipe is now locked in Caleo.

Fig.228 Mounting the water connecting pipe

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5.7 Fan motor

Replace fan motor if damaged or, at the next scheduled replacement date, at the latest (see Test Certificate for next replacement date).

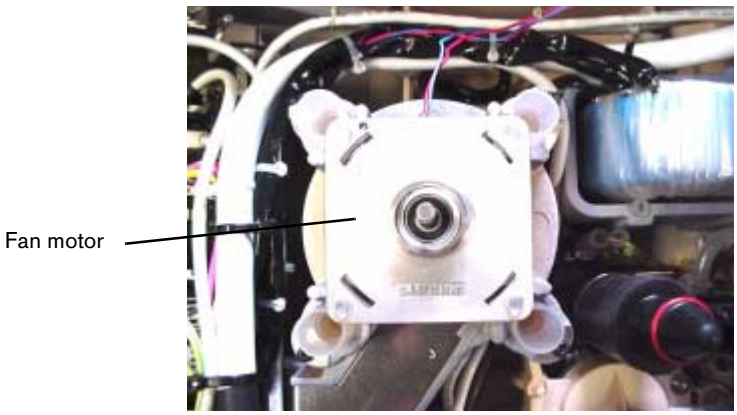

Fig.229 Fan motor

5.7.1 Checking the fan motor during normal operation

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Remove canopy.
5. Remove mattress.
6. Remove mattress tray.
7. Remove drawer.
8. Switch on Caleo at ON/OFF switch.

The fan wheel is turning.

9. Switch off Caleo at ON/OFF switch.
10. Push drawer into Caleo.
11. Mount mattress tray.
12. Place mattress into mattress tray.
13. Mount canopy.

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5.7.2 Checking the fan motor using the DrägerService mode

1. Check fan motor, see DrägerService mode, chapter "Diagnosis", section "Actuator PCB".

5.7.3 Replacing the fan motor

1. Swing aggregate housing open, see section "5.1".
2. Remove aggregate housing from basic unit, see section "5.2".
3. Take off fan wheel.
4. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 230.
5. Remove screws and washers (1), see Fig. 230.
6. Remove air heater from aggregate housing and put aside.

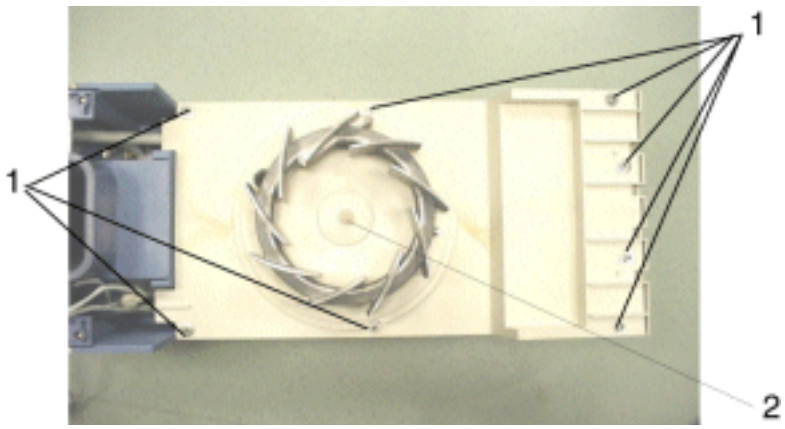

Fig.230 Front view of the air heater

7. Cut cable ties carefully and dispose of according to local waste disposal regulations.

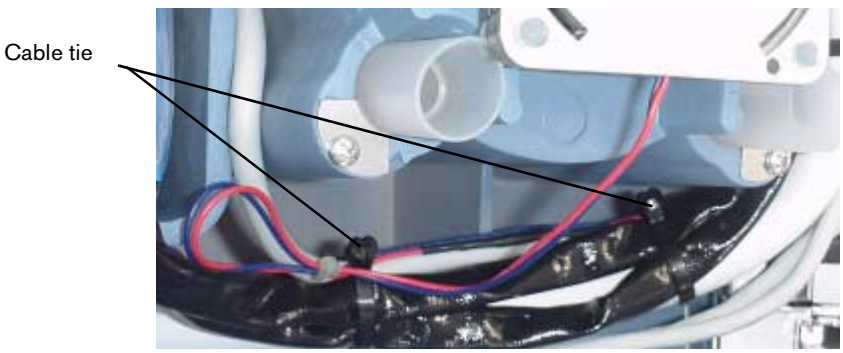

Fig.231 Cable tie

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8. Carefully cut cable ties that hold fan cable.
9. Dispose of cable ties according to local waste disposal regulations.
10. Remove screws and washers (b).

Fig.232 E-box

11. Lift housing cover a little and remove cable lug of protective earth conductor.
12. Put housing cover aside.

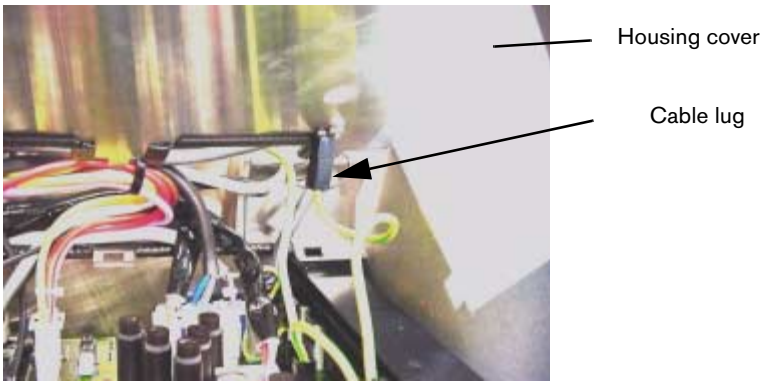

Fig.233 Protective earth conductor

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13. Disconnect fan motor cable connector from WT2 Actuator PCB.

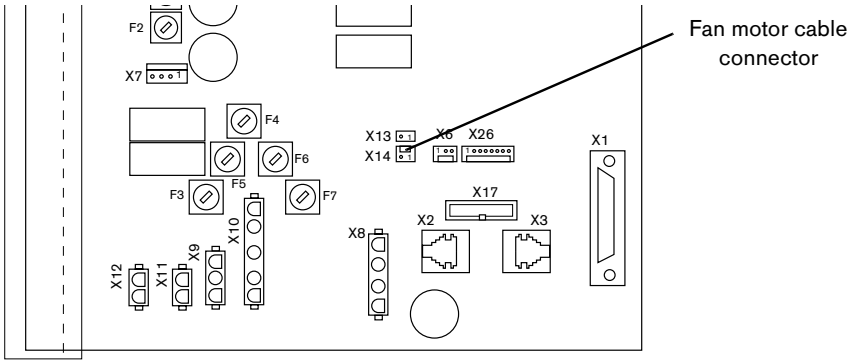

Fig.234 Detail of the WT2 Actuator PCB

14. Remove screws and fixing bracket (c).
15. Remove the fan motor/fan motor suspensions assembly from the aggregate housing and put it aside.

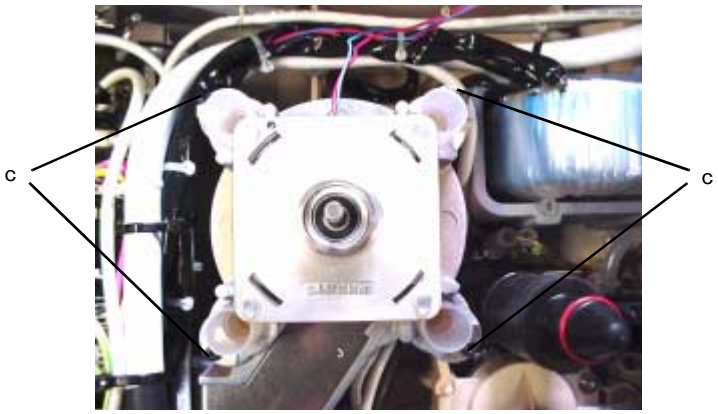

Fig.235 Fan motor

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16. Take the new fan motor out of its packing. If necessary, deburr holes (d) of new fan motor on both sides using a drill.

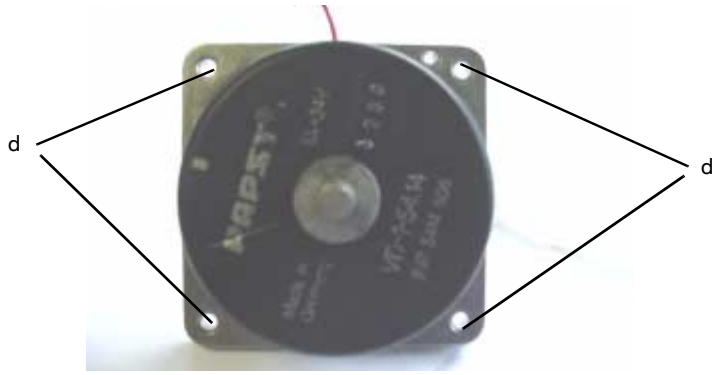

Fig.236 Fan motor

17. Remove the fan wheel from the old fan motor and install it on the new fan motor. **(Note: Make sure to fit the fan wheel correctly, see** Fig. 237**.)**
18. Dispose of the old fan motor according to local waste disposal regulations.

Fig.237 Fan wheel

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19. Apply silicone glue on the later contact surface of the sealing ring 2M50337 and attach sealing ring to the new fan motor. Allow silicone glue to cure for about 10 minutes.

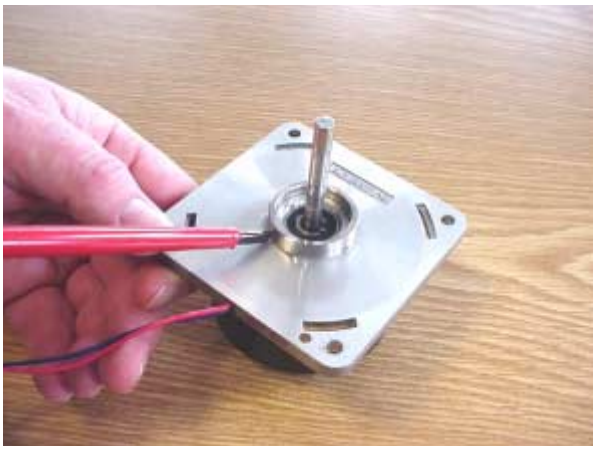

Fig.238 Sealing ring

20. Push the drawflaps through the deburred boreholes from below, then carefully pull the drawflaps through the boreholes of the fan motor using a pair of pliers **(Note: Pay attention to preferred position of fan motor suspensions)**.

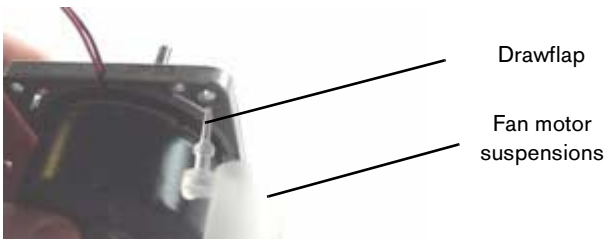

Fig.239 Mounting the fan motor suspensions

21. Cut protruding drawflaps at a distance of approx. 3 mm from fan motor and dispose of pieces according to local waste disposal regulations.

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22. Place fan motor with fan motor suspensions in center of aggregate housing and secure fan motor suspensions to aggregate housing using screws and fixing brackets (e).

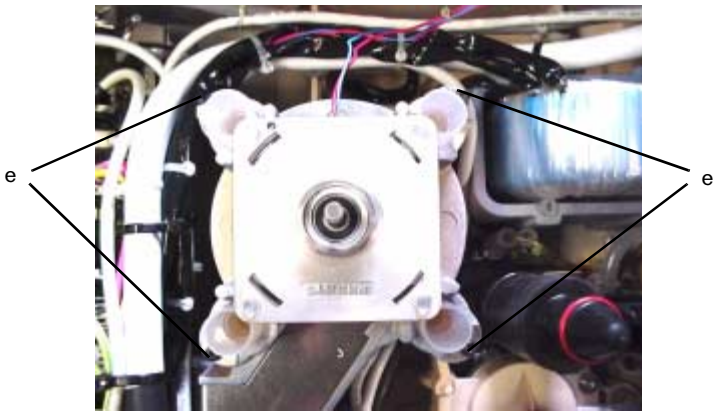

Fig.240 Fan motor

23. Attach cable of air motor to existing cable harness using a cable tie (f), see the following Figure.
24. Cut off protruding length of cable tie.
25. Dispose of cable tie pieces according to local waste disposal regulations.

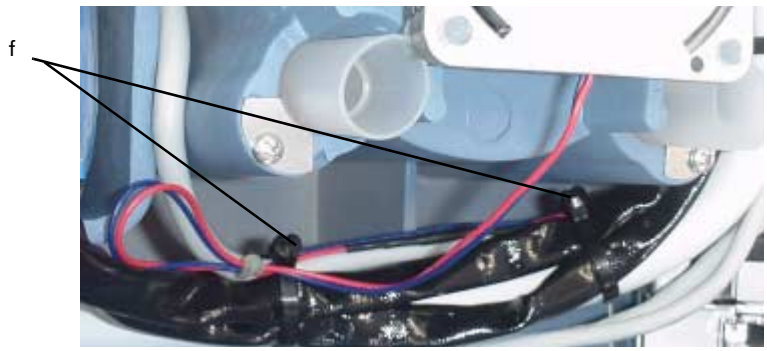

Fig.241 Cable tie

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26. Plug cable connector onto plug-in socket of WT2 Actuator PCB.

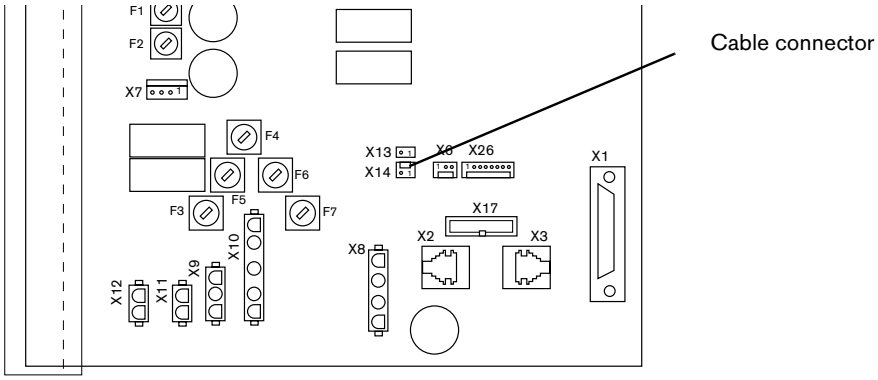

Fig.242 Detail of the WT2 Actuator PCB

27. Push housing cover into guides of E-box housing and plug cable lug onto plug-in socket on housing cover.

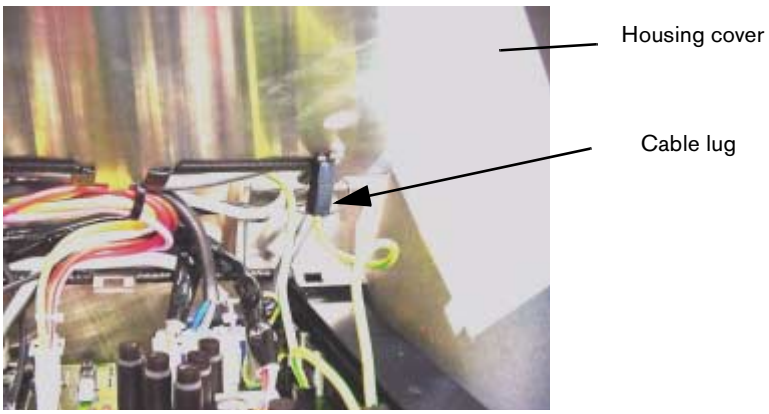

Fig.243 Protective earth conductor

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28. Secure E-box cover using screws and washers (g).

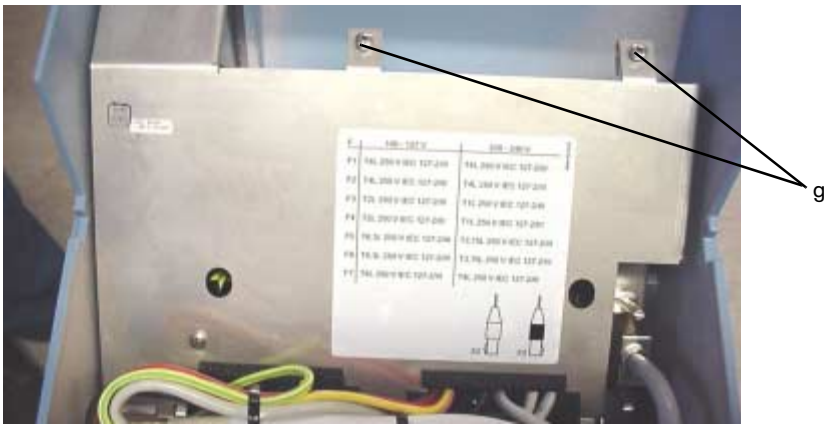

Fig.244 E-box

29. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 245.
30. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 245.

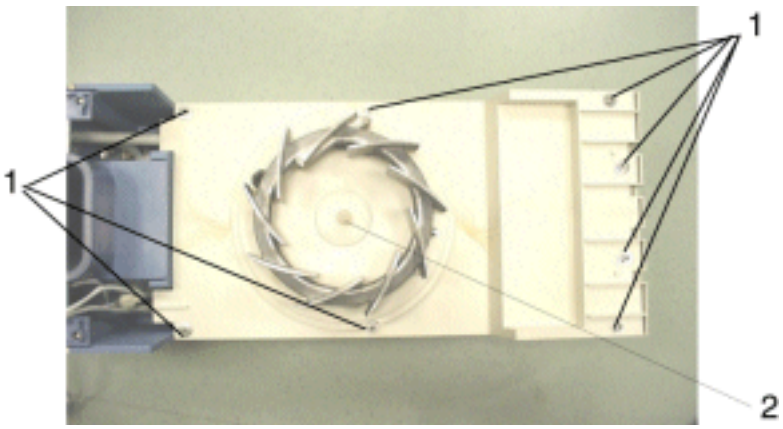

Fig.245 Front view of the air heater

31. Fit fan wheel onto rubber sleeve of fan motor.
32. Mount aggregate housing onto basic housing, see section "5.3".
33. Plug power plug of Caleo into mains socket.
34. Switch on Caleo at ON/OFF switch.
35. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
36. Switch off Caleo at ON/OFF switch.

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5.8 E-box

5.8.1 General information about the E-box

The E-box contains the WT2 Actuator PCB. In case of repair, replace the complete WT2 Actuator PCB.

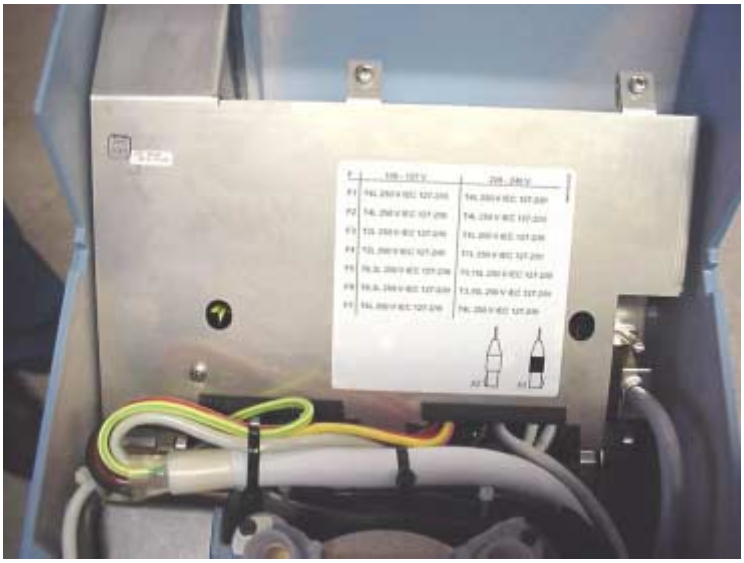

Fig.246 View of the E-box

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5.8.2 WT2 Actuator PCB

In case of repair, replace complete WT2 Actuator PCB.

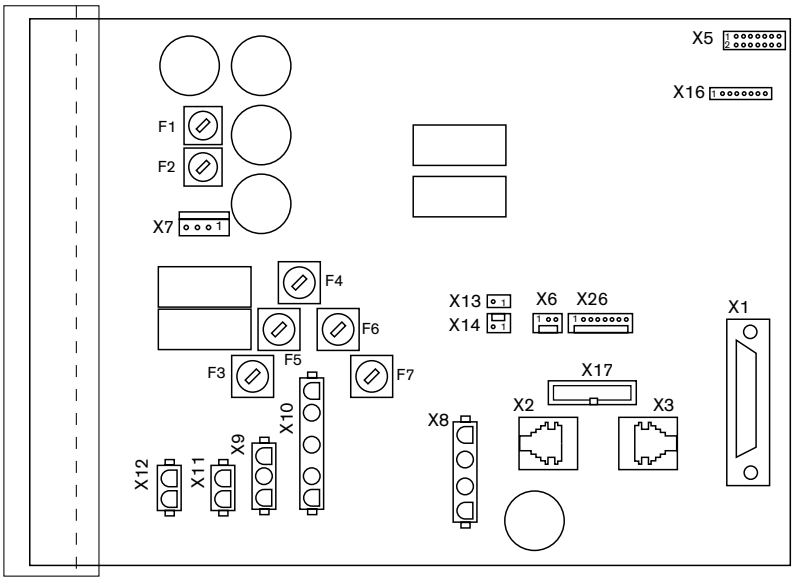

Fig. 247 WT2 Actuator PCB

Designation of fuse	Voltage range 100 -127 V	Voltage range 220 - 240 V	Function
F 1	T 4.0 AL	T 4.0 AL	Toroidal transformer 24 V a.c. (secondary)
F 2	T 4.0 AL	T 4.0 AL	Toroidal transformer 12 V a.c. (secondary)
F 3	T 2.0 AL	T 1.0 AL	Water boiler mains voltage fuse (in front of TRIAC)
F 4	T 2.0 AL	T 1.0 AL	Water boiler mains voltage fuse (behind TRIAC)
F 5	T 6.3 AL	T 3.15 AL	Air heater mains voltage fuse (in front of TRIAC)
F 6	T 6.3 AL	T 3.15 AL	Air heater mains voltage fuse (behind TRIAC)
F 7	T 4.0 AL	T 4.0 AL	Toroidal transformer (primary)

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Connectors

Plug	Connection
X 1	WT2 Controller PCB
X 2	Sensor unit
X 3	Scale
X 5	Mattress heater
X 6	Water boiler temperature and monitoring
X 7	Toroidal transformer (secondary)
X 8	Motor height/tilt adjustment
X 9	Mains voltage input
X 10	Toroidal transformer (primary)
X 11	Water boiler
X 12	Air heater
X 13	Pneumatic O2 control (O2 valve)
X 14	Fan motor
X 16	Service connector
X 17	ON/OFF switch
X 26	Air heater temperature and fan monitoring

Operating voltages at service connector X16

Pin 1	+24 Vbr
Pin 2	+24 V
Pin 3	+12 Vbr
Pin 4	+12 Vel
Pin 5	+5 V
Pin 6	+5 V_{sensor}
Pin 7	GoldCap Vcc
Pin 8	DGND

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Checking the WT Actuator PCB using DrägerService Mode

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Check WT2 Actuator PCB, see DrägerService Mode, chapter "Diagnosis", section "Operating voltages (Actuator PCB, output signals, digital signals)".

5.8.3 Replacing the WT2 Actuator PCB

1. Swing aggregate housing open, see section "5.1".
2. Remove aggregate housing from basic unit, see section "5.2".
3. Take off fan wheel.
4. Carefully remove rubber sleeve (2) from shaft of fan motor, see Fig. 248.
5. Remove screws and washers (1), see Fig. 248.
6. Remove air heater from aggregate housing and put aside.

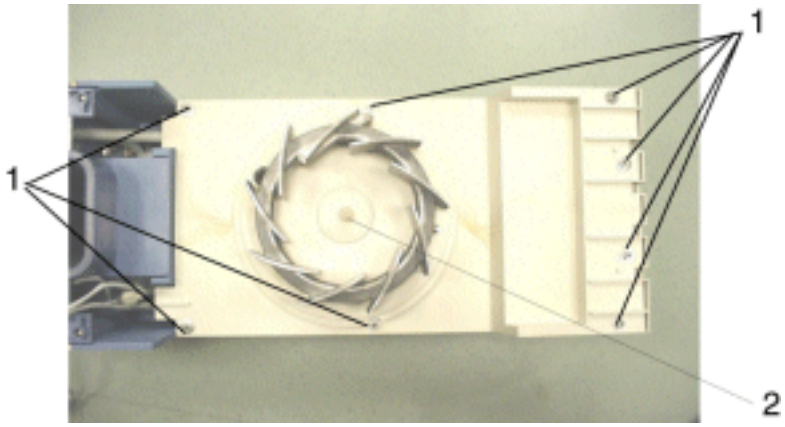

Fig.248 Front view of the air heater

Electrostatic discharge may damage electrostatic-sensitive devices. Use a static-dissipative mat and a wrist strap when handling electrostatic-sensitive devices.

7. Create ESD conditions.

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8. Remove screws and washers (b).

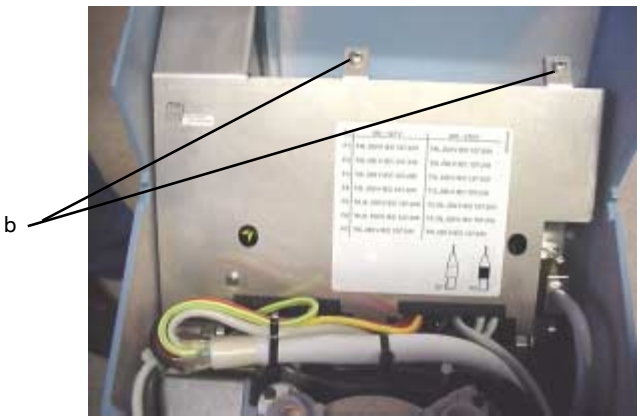

Fig.249 E-box

9. Lift housing cover a little and remove cable lug of protective earth conductor.
10. Put housing cover aside.

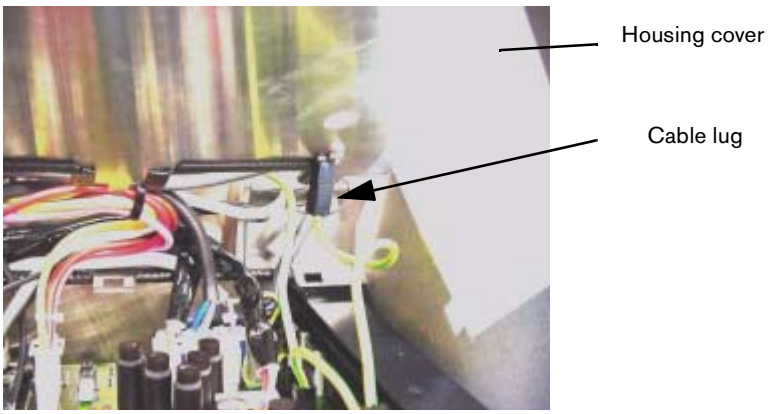

Fig.250 Protective earth conductor

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11. Loosen screws (c) and disconnect connector.
12. Disconnect all cable connectors from WT2 Actuator PCB.

Fig. 251 WT2 Actuator PCB cable connectors

13. Remove E-box from aggregate housing and place it on a stable surface.

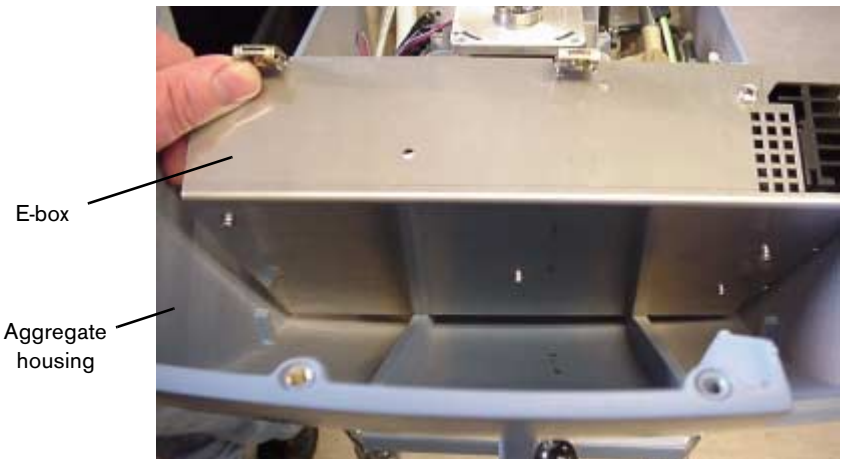

Fig. 252 Removing the E-box

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14. Remove screws and washers (d) and remove faulty WT2 Actuator PCB.

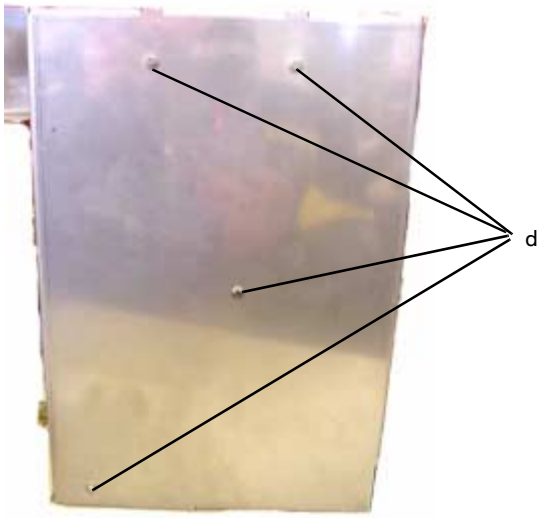

Fig.253 Bottom view of the E-box (dismounted)

15. Remove nuts, washers, and screws (e) from faulty WT2 Actuator PCB and mount onto new WT2 Actuator PCB.
16. Dispose of faulty WT2 Actuator PCB according to local waste disposal regulations.

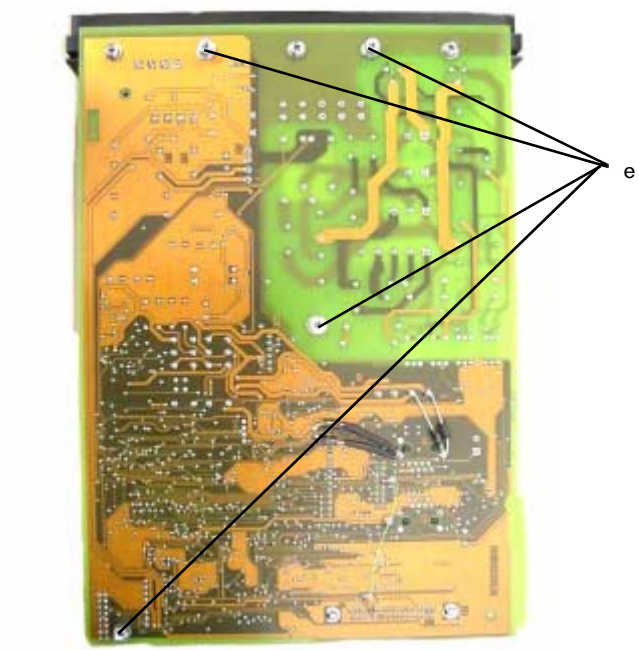

Fig.254 Soldering side of WT2 Actuator PCB

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17. Secure new WT2 Actuator PCB to E-box cover using screws and washers (f).

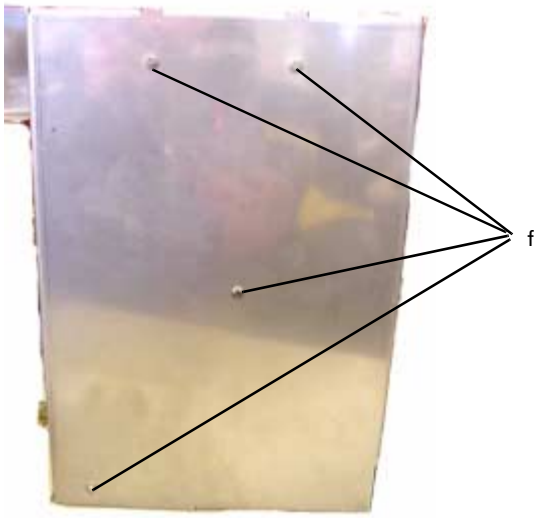

Fig.255 Bottom view of the E-box

18. Place E-box into aggregate housing.

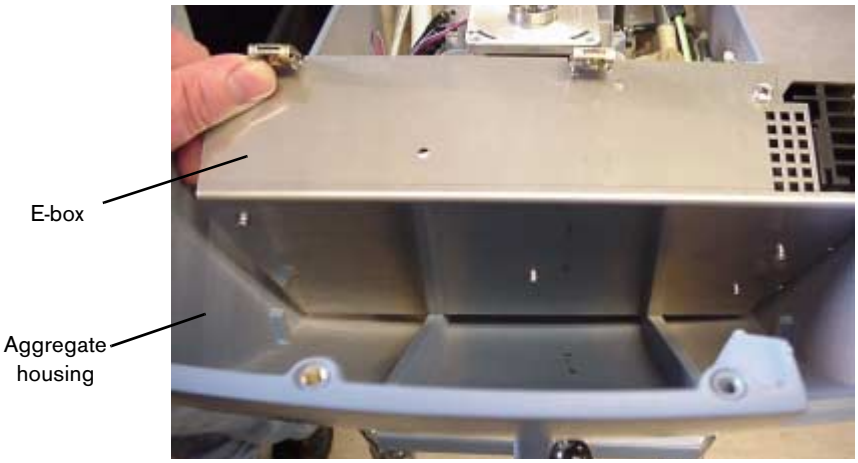

Fig.256 Mounting the E-box

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Connector X6 can be plugged into the plug-in connection in both directions without too much force. If not connected correctly, it will result in a "Water shortage alarm". Pay attention to the coding of connector X6 upon re-connection.

19. Re-connect cable connectors to WT2 Actuator PCB using the following table.

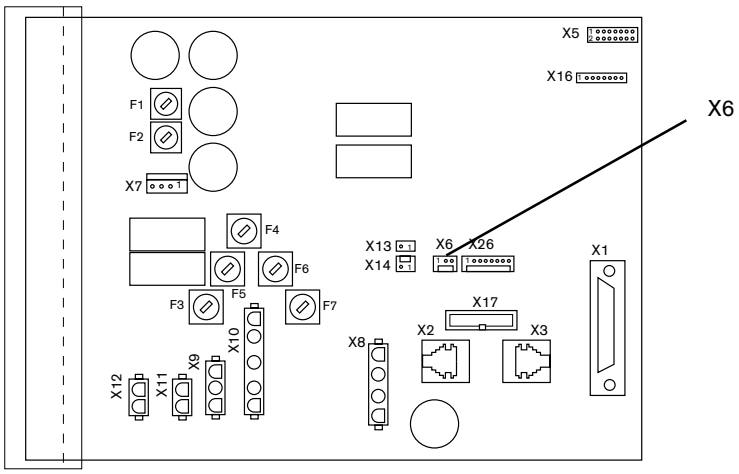

Fig.257 WT2 Actuator PCB

Plug-in connectors

Plug	Connection
X 1	WT2 Controller PCB
X 2	Sensor unit
X 3	Scale
X 5	Mattress heater
X 6	Water boiler temperature and monitoring
X 7	Toroidal transformer (secondary)
X 8	Motor height/tilt adjustment
X 9	Mains voltage input
X 10	Toroidal transformer (primary)
X 11	Water boiler
X 12	Air heater
X 13	O2 valve
X 14	Fan motor
X 16	Service connector

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X 17	ON/OFF switch
X 26	Air heater temperature and fan monitoring

20. Secure connectors using screws (g).

Fig.258 Cable connector

21. Push housing cover into guides of E-box housing and plug cable lug onto plug-in socket on housing cover.

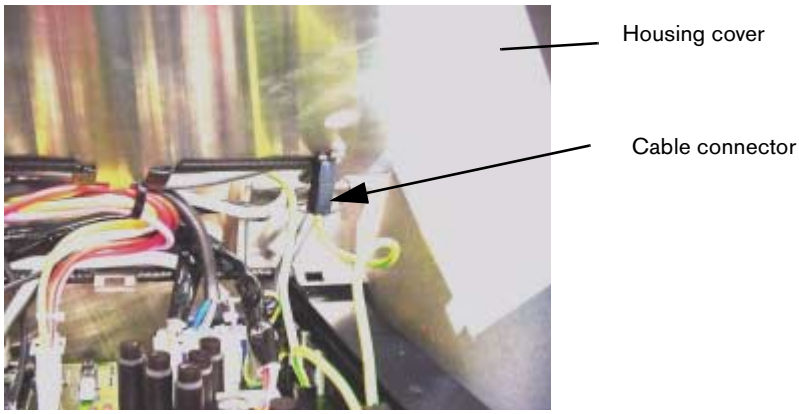

Fig.259 Protective earth conductor

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22. Secure E-box housing cover using screws and washers (h).

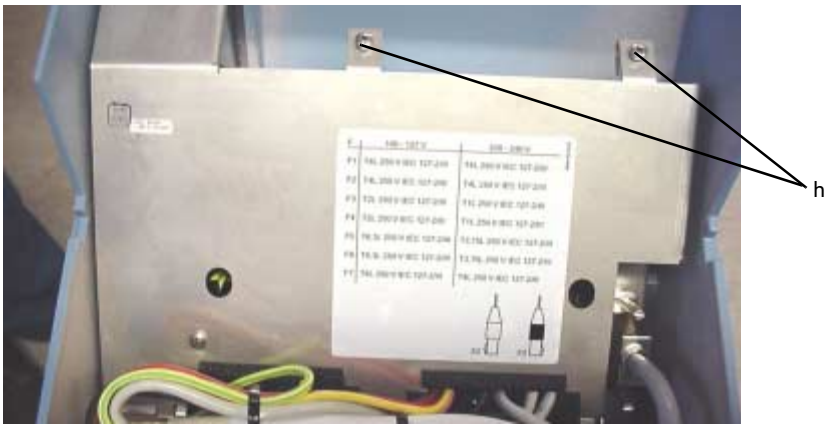

Fig.260 E-box

23. Secure air heater to aggregate housing using screws and washers (1) (Note: The tightening torque of the screws is 3.5 +0.5 Nm), see Fig. 261.
24. Fit rubber sleeve (2) onto shaft of fan motor, see Fig. 261.

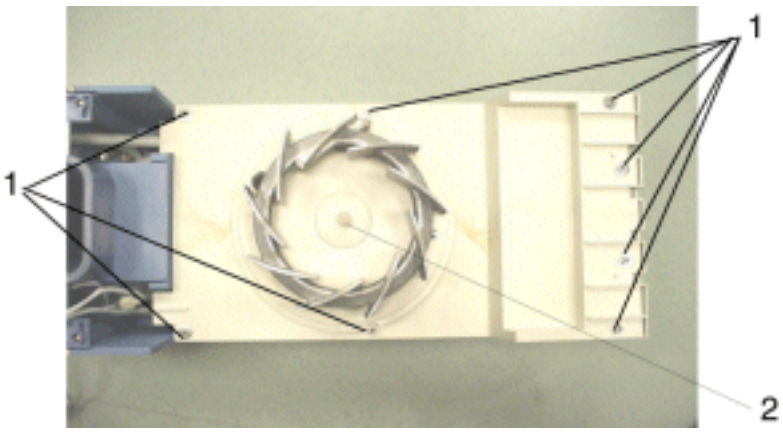

Fig.261 Front view of the air heater

25. Fit fan wheel onto rubber sleeve of fan motor.
26. Mount aggregate housing onto basic housing, see section "5.3".
27. Plug power plug of Caleo into mains socket.
28. Switch on Caleo at ON/OFF switch.
29. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
30. Switch off Caleo at ON/OFF switch.

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5.9 Pneumatic O2 control (optional)

5.9.1 General information about the pneumatic O2 control

In case of repair, replace complete O_2 valve.

Replace O_2 sintered filter in pneumatic O_2 control at regular intervals (see Test Certificate for replacement intervals).

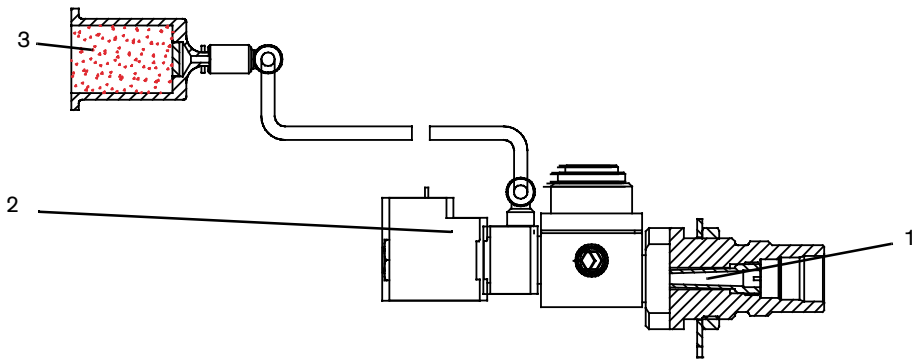

Fig.262 Pneumatics for O_2 control

1 Sintered filter
2 O_2 solenoid valve
3 Filter

5.9.2 Checking pneumatic O2 control in normal operation

1. Connect O_2 supply to Caleo.
2. Plug power plug of Caleo into mains socket.
3. Switch on Caleo at ON/OFF switch.
4. Adjust target value of 30 vol.% O_2.

The actual value shown on the EL display increased to the adjusted target value.

5. Switch off Caleo at ON/OFF switch.

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5.9.3 Checking the pneumatic O2 control with DrägerService mode

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Check pneumatic for O2 control, see DrägerService mode, chapter ”Diagnosis”, section "Output signals”.

5.9.4 Replacing the pneumatic O2 control

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Disconnect the compressed-gas connector from the wall terminal unit or compressed-gas cylinder.
4. Unscrew compressed-gas connector from Caleo.
5. Swing aggregate housing out of basic unit, see section "5.1".
6. Remove aggregate housing from basic unit, see section "5.2".
7. Remove nut and washer from O_2 connection (optional).
8. Remove silicone glue residues from thread of nut.

Fig.263 View of the connection of the O_2 supply

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9. Remove screws and washers (a).
10. Pull fresh-air filter mount out of aggregate housing.

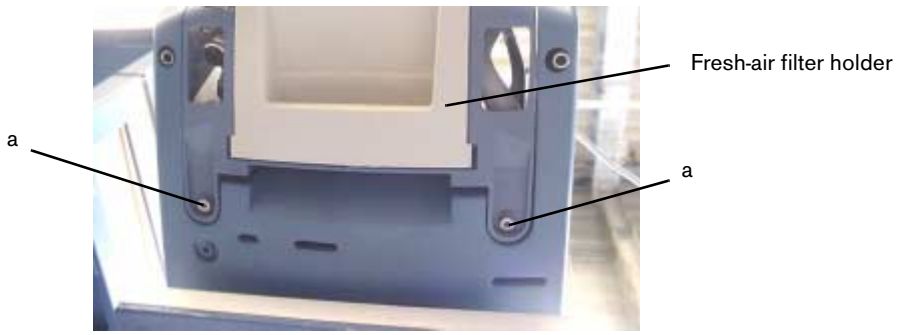

Fig.264 Bottom view of the aggregate housing

11. Lift filter box slightly.

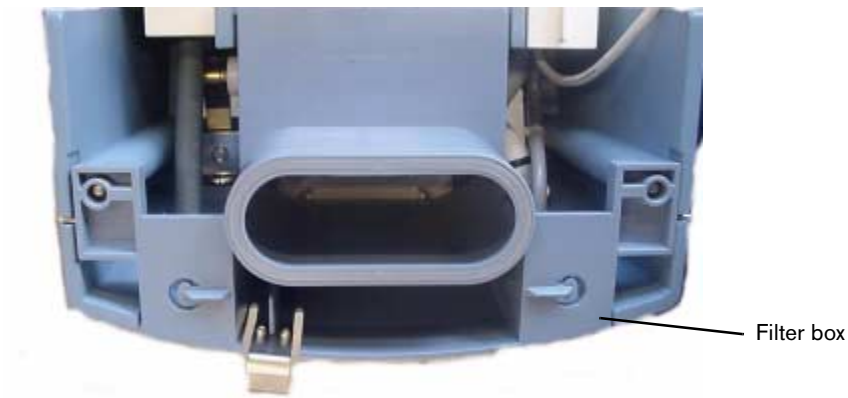

Fig.265 Top view of the aggregate housing

12. Disconnect water boiler tube from water boiler and put it aside.

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13. Push mount out of filter box.
14. Push mount of filter out of holder and put mount aside.

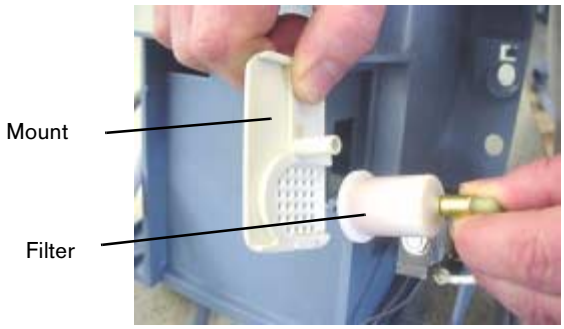

Fig.266 Filter and mount

15. Carefully cut cable ties that hold cables of O2 solenoid valve and dispose of according to local waste disposal regulations.
16. Remove screws and washers (b).

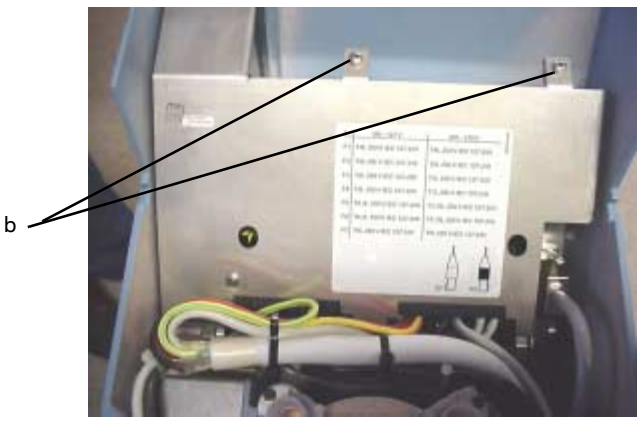

Fig.267 E-box

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17. Lift housing cover a little and remove cable lug of protective earth conductor.
18. Put housing cover aside.

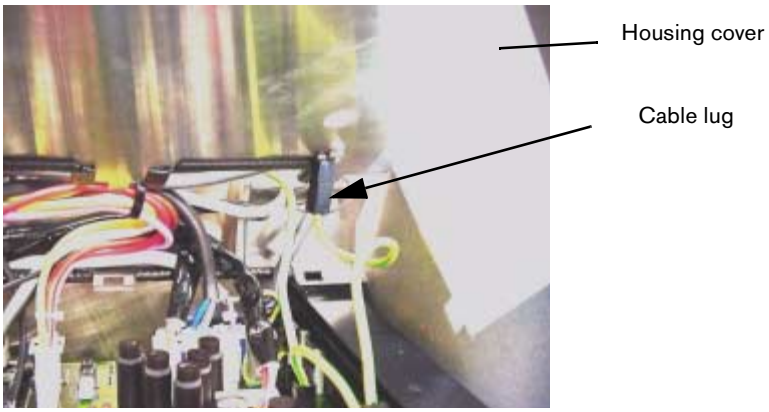

Fig.268 Protective earth conductor

19. Disconnect cable connector of pneumatic O_2 control from WT2 Actuator PCB.

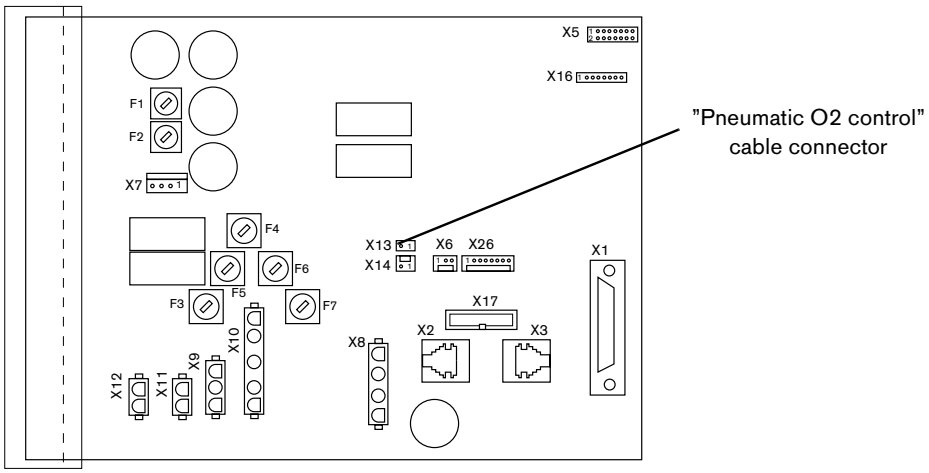

Fig.269 View of the WT2 Actuator PCB

20. Remove faulty pneumatic O2 control and dispose of according to local waste disposal regulations.
21. Insert new pneumatic O_2 control through opening in basic housing.
22. Apply silicon glue, e.g. Wacker Elastosil E41 (P/N 1202537), on the thread end of the O2 connection.

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23. Secure pneumatic O_2 control to basic housing using washer and nut (1) **(Note: The pressure regulator adjusting screw (2) of the pneumatic O_2 control must be visible from the outside through the opening in the basic housing.), see** Fig. 270.

Fig.270 Connection of O2 supply

24. Attach cables of O2 solenoid valve of pneumatic O_2 control to cable harness using cable ties.
25. Cut off any protruding length of cable ties and dispose of according to local waste disposal regulations.
26. Plug pneumatic O_2 control cable connector onto plug-in socket of WT2 Actuator PCB "X13".

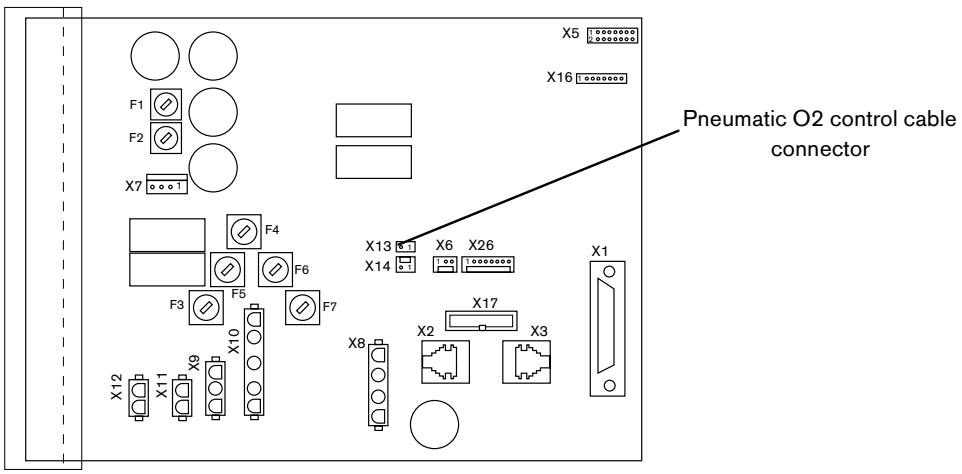

Fig.271 WT2 Actuator PCB

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27. Put housing cover onto E-box and push cable lug of protective earth conductor onto contact on housing cover.
28. Push housing cover into provided slots on E-box.

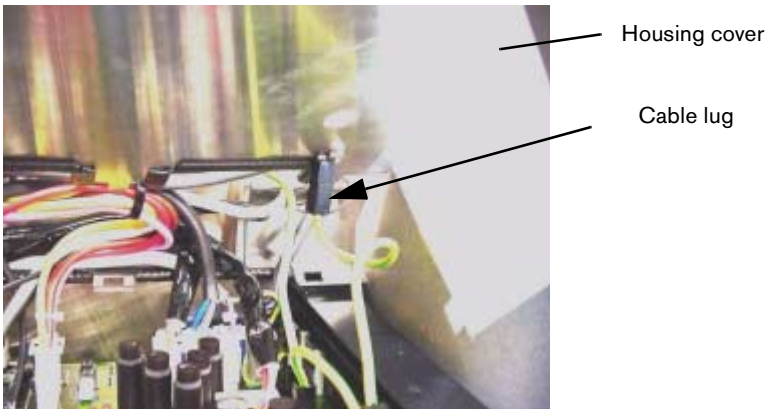

Fig. 272 Protective earth conductor

29. Secure cover using screws and washers (c).

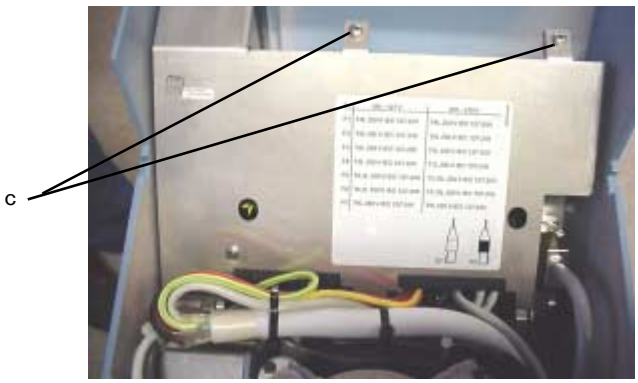

Fig. 273 E-box

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30. Place cables of O2 solenoid valve into recesses on basic housing.
31. Mount tube and positioning plate onto water boiler **(Note: The lines of the pneumatic O2 control must be in the recess underneath the positioning plate of the water boiler.)**, push tube and positioning plate into the provided mount.

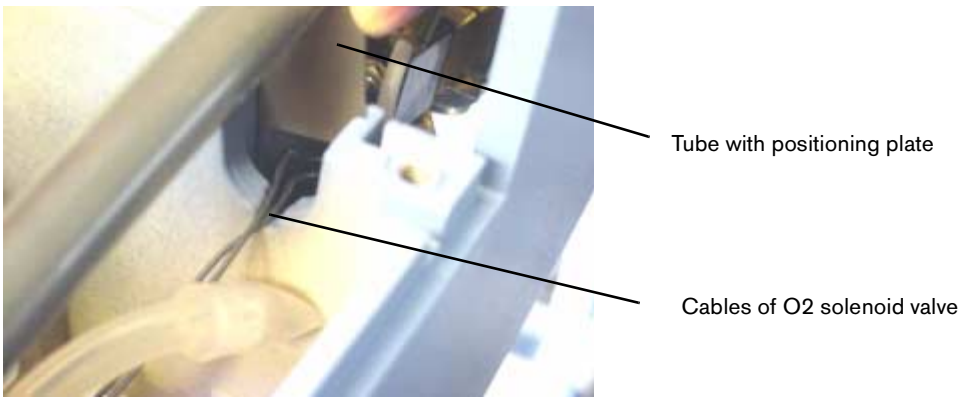

Fig. 274 Tube on water boiler

32. Mount aggregate housing onto basic housing, see section "5.3 Mounting the aggregate housing onto the basic housing".
33. Plug power plug of Caleo into mains socket.
34. Switch on Caleo at ON/OFF switch.
35. Check Caleo using Test Certificate, see sections "Electrical safety", "Pneumatic O2 control", and "Functional tests".
36. Switch off Caleo at ON/OFF switch.

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6 Basic housing

The basic housing consists of the following components:

- Basic housing
- Column elements
- Mattress
- Mattress tray
- Plastic plate with fresh-air channel
- Scale (option)

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6.1 Fresh-air channel

1 = fresh-air channel, see Fig. 275.

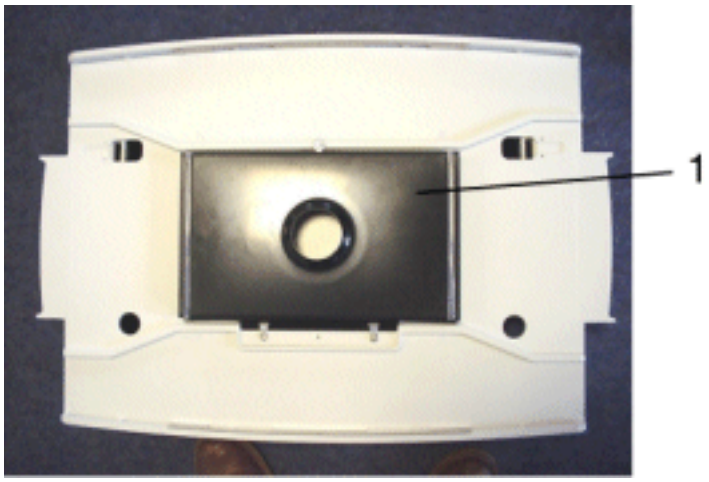

Fig. 275 Plastic plate with fresh-air channel

6.1.1 Snap-to guides of fresh-air channel

General information about the snap-to guides

The snap-to guides of the fresh-air channel make sure that the fresh-air channel is pressed against the basic housing.

If snap-to guides are broken, fresh-air channel may be shifted when pulling out the X-ray drawer.

Replacing faulty snap-to guides of fresh-air channel

1. Remove canopy and place it on a stable surface such that it cannot be scratched.
2. Swing aggregate housing out of basic housing, see section "5.1".
3. Remove aggregate housing from basic housing, see section "5.2".
4. Remove the mattress from the Caleo.
5. Remove mattress tray from Caleo.

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6. Carefully push intact snap-to guide aside and remove plastic plate and fresh-air channel from basic housing.
7. Remove screws and washers (a) of faulty snap-to guide.
8. Dispose of faulty snap-to guide(s) according to local waste disposal regulations.
9. Mount new snap-to guide (pay attention to preferred position) using screws and washers (a).

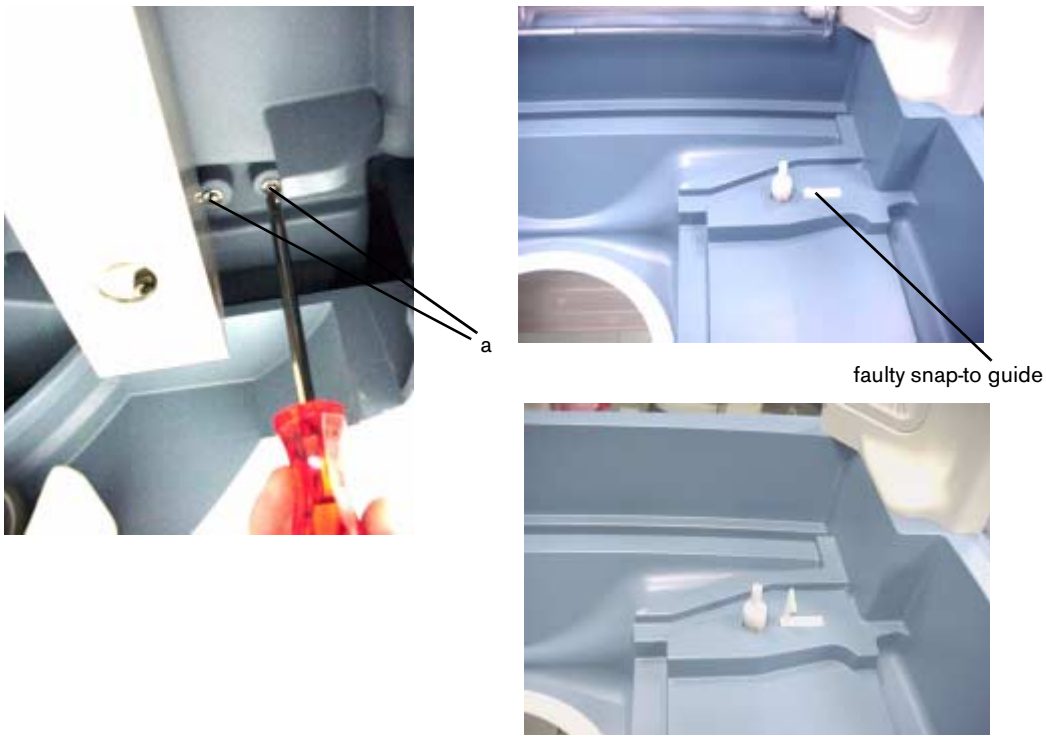

Fig. 276 Bottom view (left) and top view (right) of the basic housing

10. Place plastic plate and fresh-air channel into Caleo (Note: The snap-to guides lock the plastic plate to the fresh-air channel.).
11. Place mattress tray into Caleo.
12. Place mattress onto mattress tray.
13. Mount aggregate housing onto basic housing, see section "5.3".
14. Plug power plug of Caleo into mains socket.
15. Switch on Caleo at ON/OFF switch.
16. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
17. Switch off Caleo at ON/OFF switch.

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6.2 Fresh-air filter

Pay attention to replacement intervals of fresh-air filter (see Instructions for Use/Operating Instructions for replacement intervals.).

6.2.1 Replacing the fresh-air filter

1. Plug power plug of Caleo into mains socket.
2. Switch on the Caleo at the power switch.
3. Tilt the bed to the left, see the following Figure.

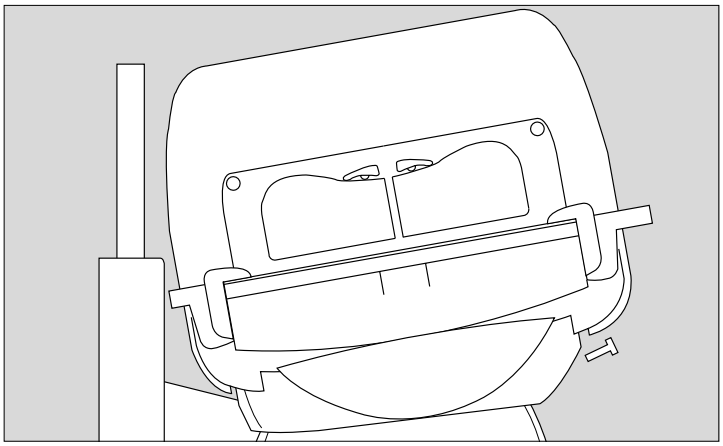

Fig.277 Front view of the Caleo

4. Switch off Caleo at ON/OFF switch.
5. Hold the fresh-air filter holder by the recessed grip, pull the fresh-air filter holder downwards and remove.

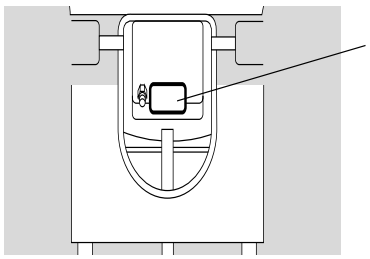

Fig.278 Side view of Caleo

6. Hold the fresh-air filter holder, remove the filter frame and place it aside.

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7. Remove the spent fresh-air filter from the fresh-air filter holder and dispose of (with household waste).

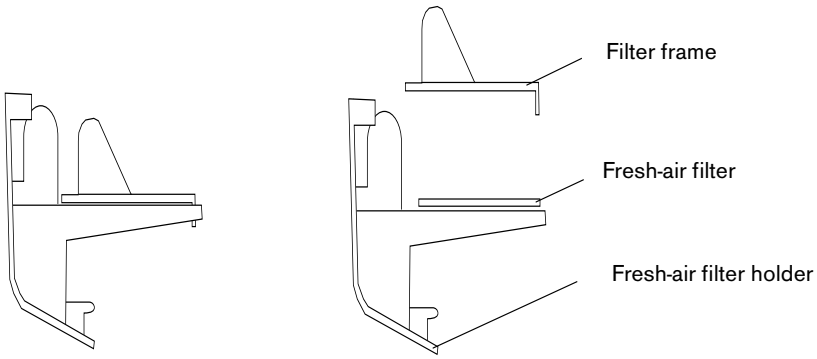

Fig.279 Fresh-air filter holder

8. Mount the new fresh-air filter into the fresh-air filter holder.
9. Mark the date of first use on the label of the new fresh-air filter and affix the label to the edge of the fresh-air filter.
10. Press the filter frame onto the fresh-air filter holder.
11. Push the fresh-air filter holder into the Caleo.

Fig.280 Fitting location of fresh-air filter mount

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6.3 Removing basic housing and aggregate housing from trolley

6.3.1 General information about removal

Remove basic housing and aggregate housing from trolley if any of the assemblies/components listed below is faulty:

- Slide block (bearing block)
- Rolls (bearing block)
- Trolley castor
- Trolley castor shaft
- Pedal (optional)
- Bellows (optional)

6.3.2 Removing basic housing and aggregate housing from trolley

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Move optional electrical height adjustment to lowest position.
4. Move mattress tray of Caleo to central position.
5. Switch off Caleo at ON/OFF switch.
6. Pull power plug of Caleo out of mains socket.
7. Push locking clamp of mains connection cable on electronic unit of trolley aside and remove mains connection from electronic unit of trolley.
8. Remove display housing from trolley, see section "4.2.1".
9. Vertically lift off canopy from Caleo and place it on a stable surface.
10. Disconnect skin-temperature sensor connectors from skin-temperature sockets and put aside.
11. Remove optional compressed gas connector from gas terminal unit of central gas supply or compressed gas cylinder connection.
12. Unscrew compressed-gas connector from optional pneumatic O_2 control.
13. Remove water supply (conduit set).

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14. Unscrew optional accessory tube (1) and put aside.

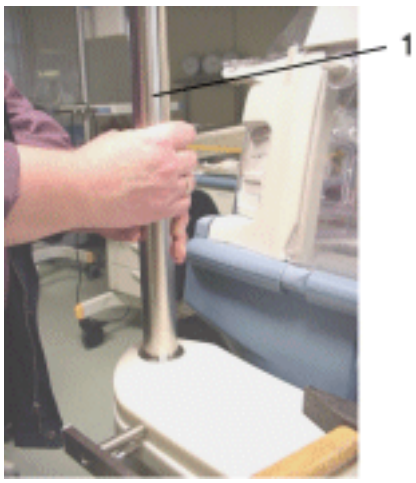

Fig.281 Accessory tube

15. Unscrew connector counter-clockwise from electronic unit of aggregate housing .

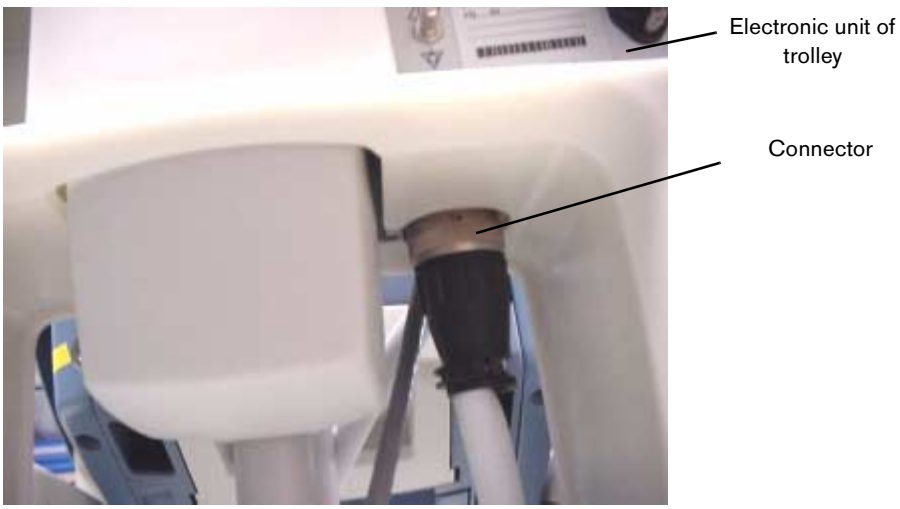

Fig.282 Connector

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16. Remove spring washer (1) from shaft of mattress tray tilt adjustment, see Fig. 283.

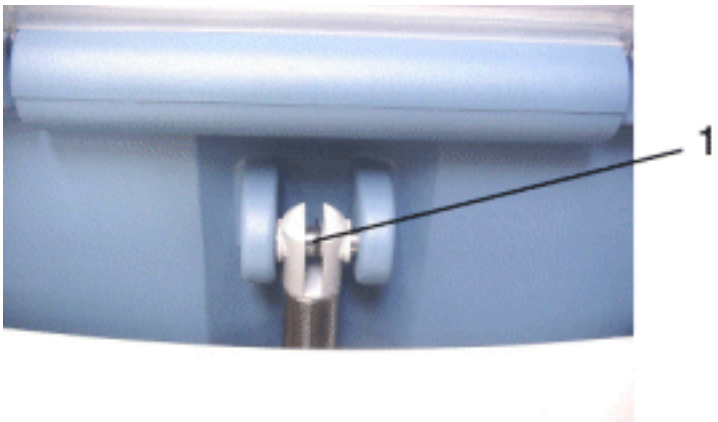

Fig.283 Shaft of mattress tray tilt adjustment

17. Carefully knock out shaft of mattress tray tilt adjustment, by using a hammer and, for example, a hex socket screwdriver.

Fig.284 Shaft of mattress tray tilt adjustment

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18. Protect plunger of motor (mattress tray tilt adjustment) against falling down, for example, by binding it with a test cable.

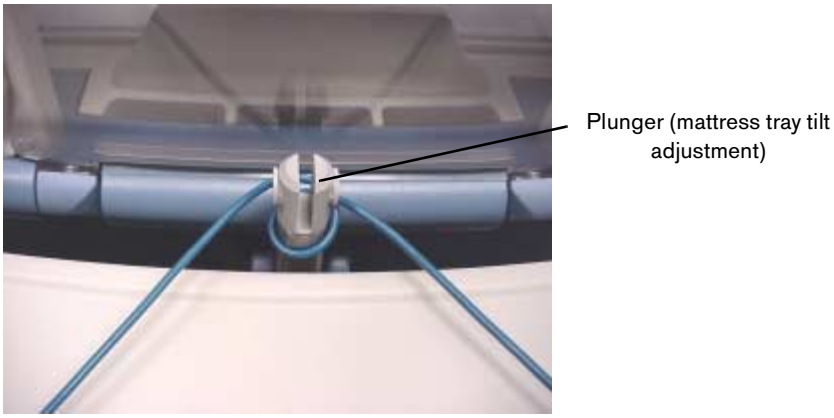

Fig.285 Plunger (mattress tray tilt adjustment)

19. Remove screws and washers (a).

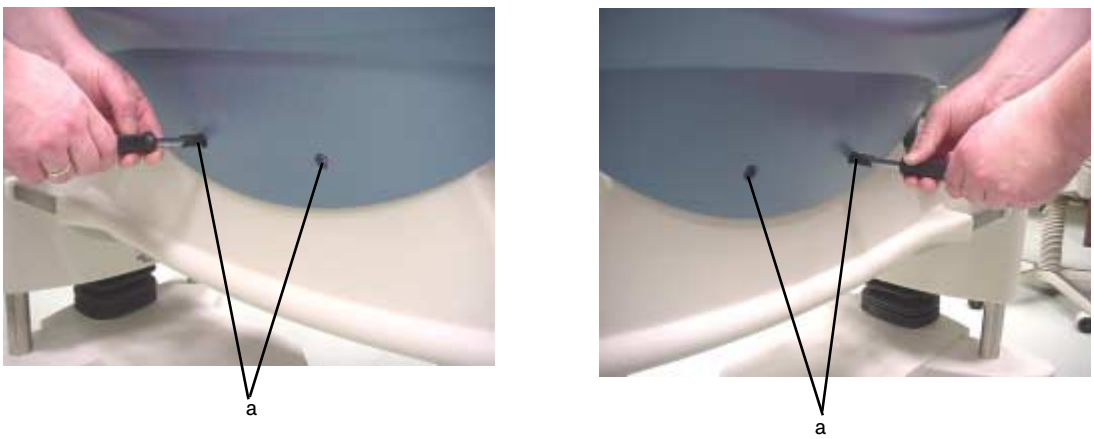

Fig.286 Front and rear views of Caleo

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The basic housing/aggregate housing assembly is heavy; it could fall down when removing it from the trolley. To avoid this, remove the basic housing/aggregate housing assembly from the trolley with the help of a second person.

20. Remove basic housing/aggregate housing assembly from trolley with the help of another person, see the following Figure.

Fig.287 Basic housing/aggregate housing assembly

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6.4 Mounting basic housing/aggregate housing assembly onto trolley

The basic housing/aggregate housing assembly is heavy; it could fall down when installing it on the trolley. To avoid this, install the basic housing/aggregate housing assembly on the trolley with the help of a second person.

21. Make sure that bearing blocks are centered and place basic housing/aggregate housing assembly onto trolley with the help of another person.

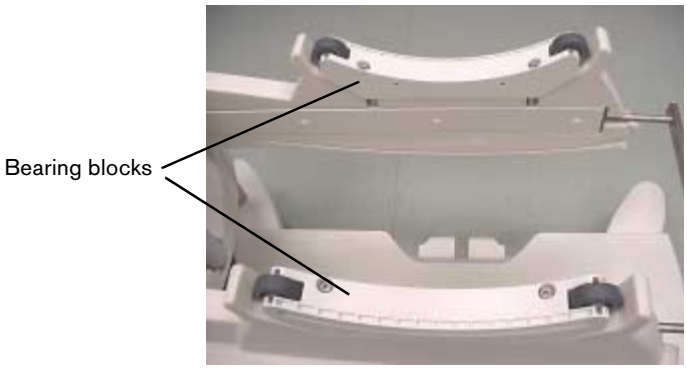

Fig.288 Basic housing/aggregate housing assembly

22. Secure aggregate housing to trolley using screws and washers (a) (Note: The tightening torque of the screws is 4 +0.5 Nm).

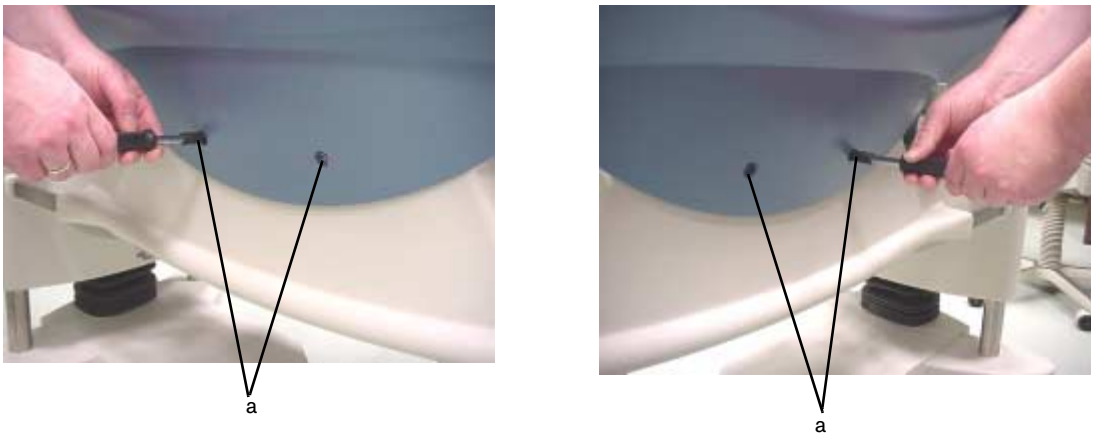

Fig.289 Front and rear views of Caleo

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23. Carefully center shaft of mattress tray tilt adjustment in mount of basic housing, by using a hammer and, for example, a hex socket screwdriver.

Fig.290 Shaft of mattress tray tilt adjustment

24. Secure shaft against falling down by pressing spring washer onto shaft, e.g. by using combination pliers.

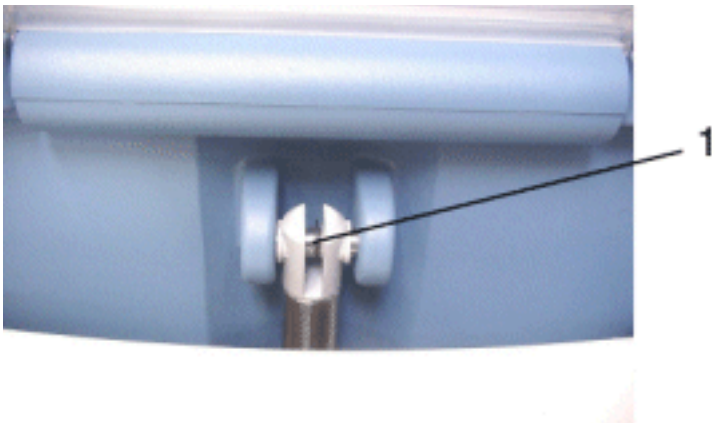

Fig.291 Plunger of mattress tray tilt adjustment

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25. Check that pins of connector are not bent or damaged and screw connector clockwise into electronic unit of trolley (Note: Carefully straighten bent pins using, for example, pointed pliers).

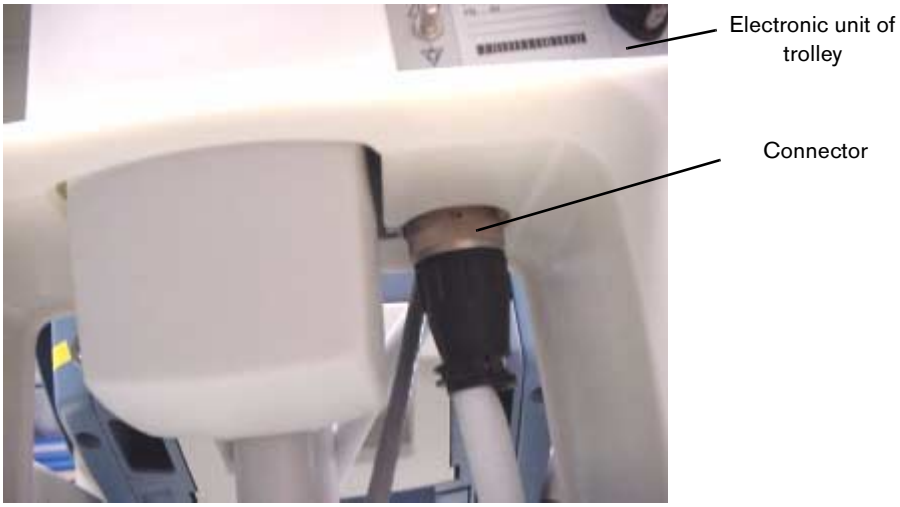

Fig.292 Connector

26. Mount display housing onto trolley, see "4.2.2".
27. Plug power plug of Caleo into mains socket.
28. Switch on Caleo at ON/OFF switch.
29. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
30. Switch off Caleo at ON/OFF switch.

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6.5 Scales (optional)

In case of repair, replace complete scale (electronic assembly of scale and weighing cells).

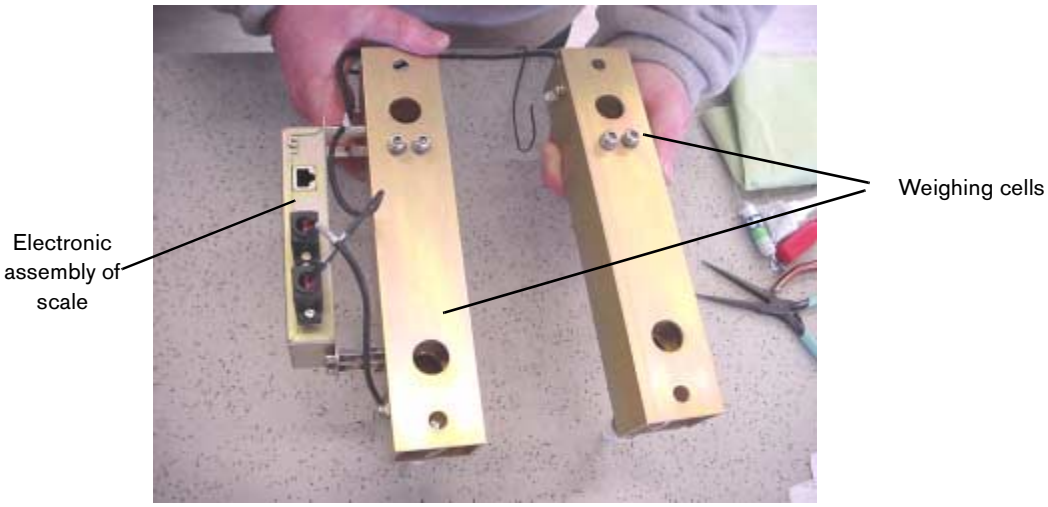

Fig.293 Scale

6.5.1 Checking the scale during normal operation

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Check that mattress tray is inserted correctly and is in a horizontal position.
6. Check that no objects are on mattress tray.
7. While pressing slightly on mattress tray, activate weighing process.

The EL display should show the weighing result.

8. Switch off Caleo at ON/OFF switch.

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6.5.2 Checking the scale using the DrägerService mode

1. Assemble Caleo ready for use.
2. Connect Caleo to compressed-gas supply.
3. Plug power plug of Caleo into mains socket.
4. Switch on Caleo at ON/OFF switch.
5. Check that mattress tray is inserted correctly and is in a horizontal position.
6. Check that no objects are on mattress tray.
7. Check scale, see DrägerService Mode, section "Calibrations", test step "Scale".

6.5.3 Replacing the scale

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Disconnect optional compressed-gas connector from wall terminal unit or compressed-gas cylinder.
4. Unscrew oxygen connector from Caleo.
5. Vertically lift off canopy from Caleo and place it on a stable surface.
6. Swing aggregate housing out of basic unit, see section "5.1 Swinging the aggregate housing out of the basic housing".
7. Remove aggregate housing from basic unit, see section "5.2 Removing the aggregate housing from the basic housing".
8. Press latch on cable connector and pull cable connector out of scale's electronic assembly.

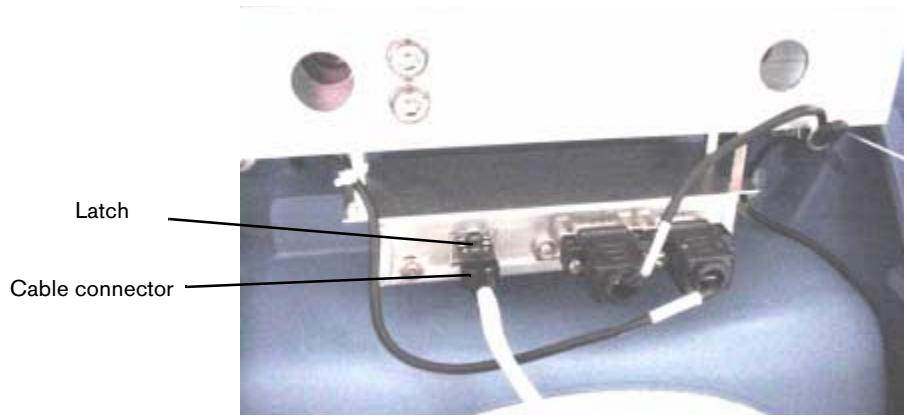

Fig.294 Bottom view of the basic housing, scale's electronic assembly

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9. Remove screws and washers (a).
10. Dispose of faulty scale according to local waste disposal regulations.
11. Secure new scale to basic housing using screws and washers (a) (Note: The tightening torque of the screws is 2.5 Nm +0.5 Nm).

Illustration not available yet.

Fig.295 Scale

12. Mount aggregate housing onto basic housing, see section "5.3 Mounting the aggregate housing onto the basic housing".
13. Lower canopy vertically onto the Caleo.
14. Plug power plug of Caleo into mains socket.
15. Connect Caleo to compressed-gas supply (optional).
16. Switch on Caleo at ON/OFF switch.
17. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
18. Switch off Caleo at ON/OFF switch.

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7 Trolley

The trolley contains the following subassemblies:

- Housing trolley
- Electronic unit of trolley
- DC motor for tilt adjustment
- DC motor for height adjustment (optional)
- Castors

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7.1 Removing the housing of the trolley

1. Switch off Caleo at ON/OFF switch.
2. Pull the power plug of the Caleo out of the mains socket.
3. Unscrew guide pin of conduit set (1) (preferably with plastic-jawed pliers in order not to damage guide pin of conduit set), see Fig. 296.

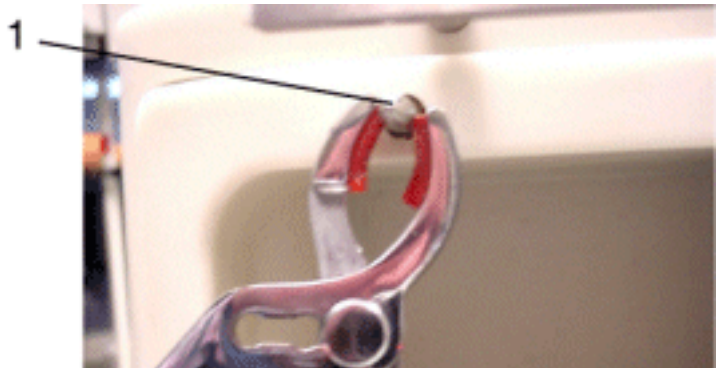

Fig.296 Guide pin of conduit set

4. Remove screw and washer (1), see Fig. 297.

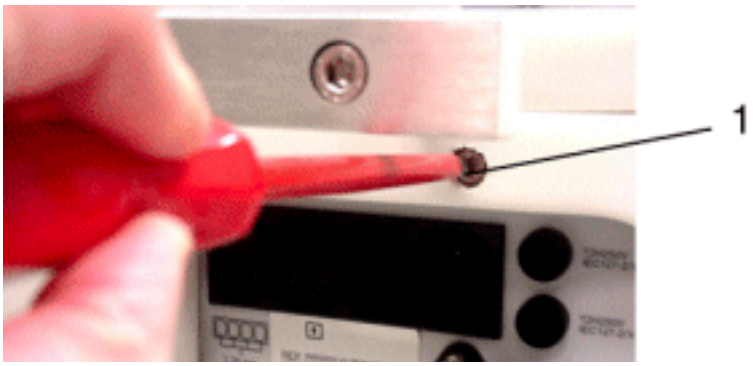

Fig.297 Side view of Caleo

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5. First compress housing of trolley on the left side and pull housing of trolley slightly out towards the rear.
6. Compress housing of trolley on the right top side and pull housing of trolley slightly out towards the rear.
7. Lift housing of trolley and remove from trolley.

Fig.298 Side view of Caleo

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7.2 Mounting the housing of the trolley

1. Hook housing of trolley (with guide groove pointing down) into trolley.

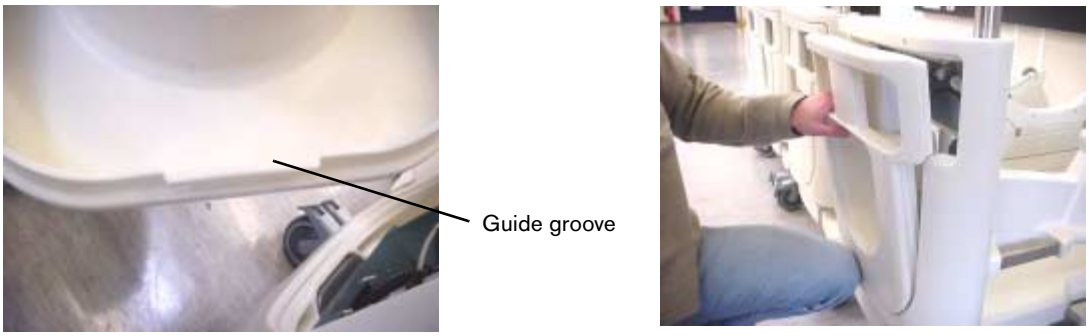

Fig.299 Side view of Caleo

2. Press top or center part of housing of trolley against trolley and, at the same time, carefully fit housing of trolley into trolley using, for example, a screwdriver.

Fig.300 Side view of Caleo

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3. Secure housing of trolley using screw and washer (1), see Fig. 301.

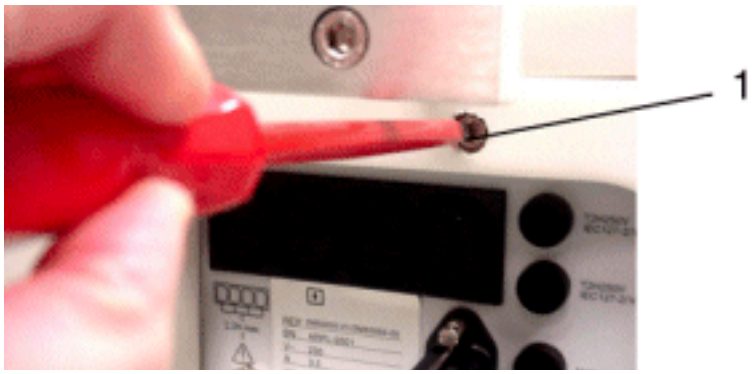

Fig.301 Side view of Caleo

4. Mount guide pin of conduit set (1) (preferably using plastic-jawed pliers), see Fig. 302.

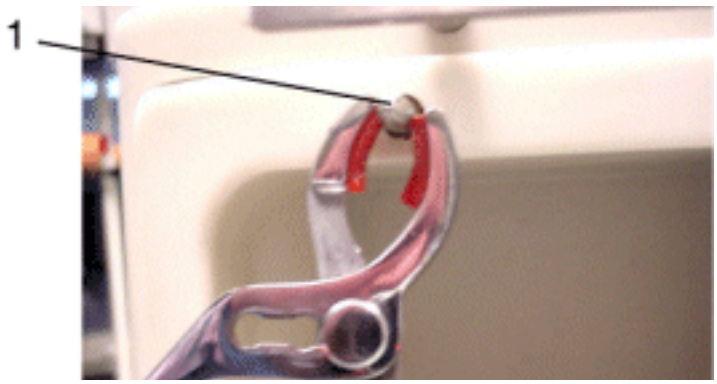

Fig.302 Guide pin of conduit set

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7.3 Electronic unit of trolley

The electronic assembly of the trolley comprises the following subassemblies:

- Electronic unit of trolley
- Integrated multiple socket outlet
- WT2 Mains PCB
- Mains voltage fuses
- Mains voltage socket

Fig.303 Electronic box

Key

1	Electronic unit of trolley
2	Mains voltage fuses
3	ON/OFF switch
4	Ground stud
5	Mains voltage socket
6	Integrated multiple socket outlet

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7.3.1 WT2 Mains PCB

In case of repair, replace complete WT2 Mains PCB. Replace faulty mains voltage fuses with new mains voltage fuses of the same rating.

General information about the WT2 Mains PCB

In case of repair, replace complete WT2 Mains PCB.

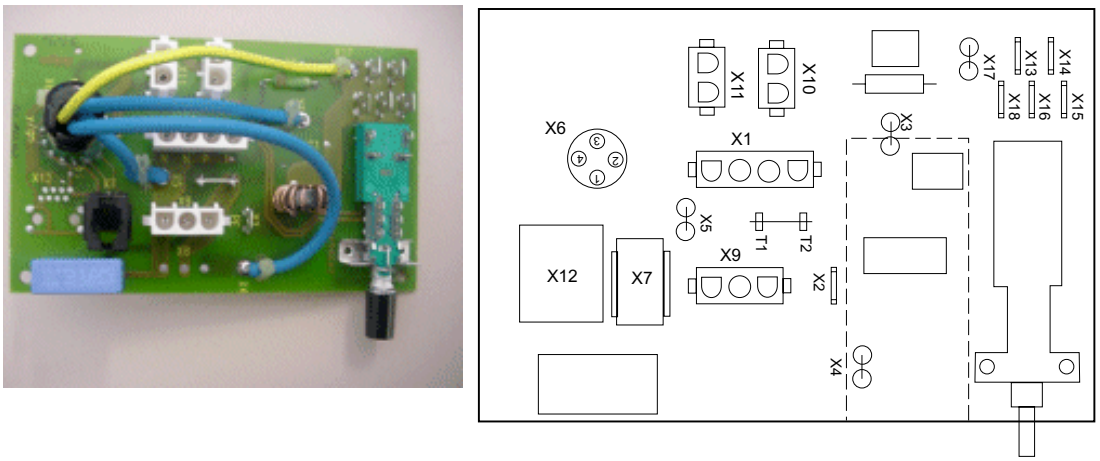

Fig.304 WT2 Mains PCB

Pin assignment

X1	Mains voltage connection
X2	Protective earth conductor connection
X3	Actuator connection
X4	Actuator connection
X5	Actuator connection
X6	Power switch connector
X7	Signal connection (height adjustment)
X9	Autotransformer connection
X10	Motor connection (height adjustment)
X11	Motor connection (tilt adjustment)
X13-X18	Protective earth conductor connection

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Replacing the WT2
Mains PCB

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. Push clip to the right.
4. Disconnect mains voltage cable from mains voltage socket and put mains voltage cable aside.
5. Unscrew cable connector of aggregate counter-clockwise from electronic unit of trolley (for example, using plastic-jawed pliers).

Fig.305 Electronic unit of trolley

6. Dismount the housing of the trolley, see section "7.1".
7. Remove screws and washers (a) and pull front cover (b) slightly out.

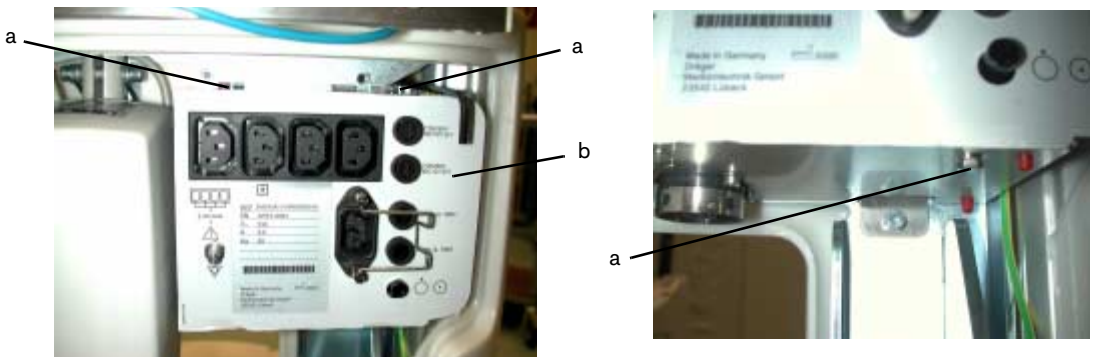

Fig.306 Electronic unit of trolley

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8. Disconnect connectors of cables (c) from WT2 Mains PCB and push all cables and cable inlet sleeves out of electronic unit of trolley (at the side).

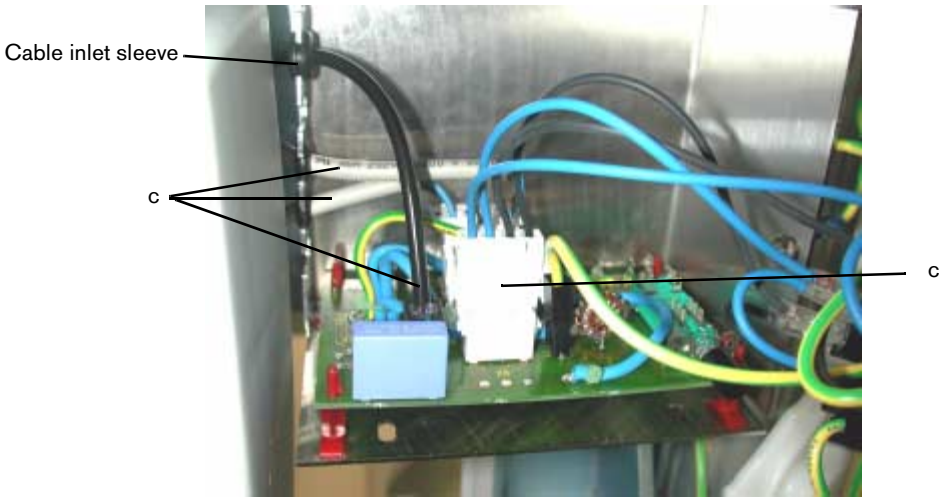

Fig.307 WT2 Mains PCB

9. Disconnect cable connector of ground (d) from the Mains PCB and cable connector of trolley (e) from front cover, and put front cover aside.

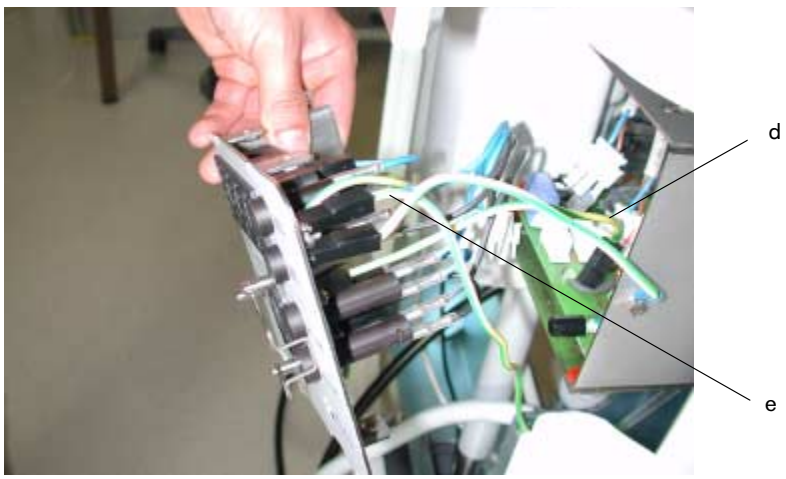

Fig.308 Front cover

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10. Remove screws and washers (f), and remove electronic unit of trolley from trolley.

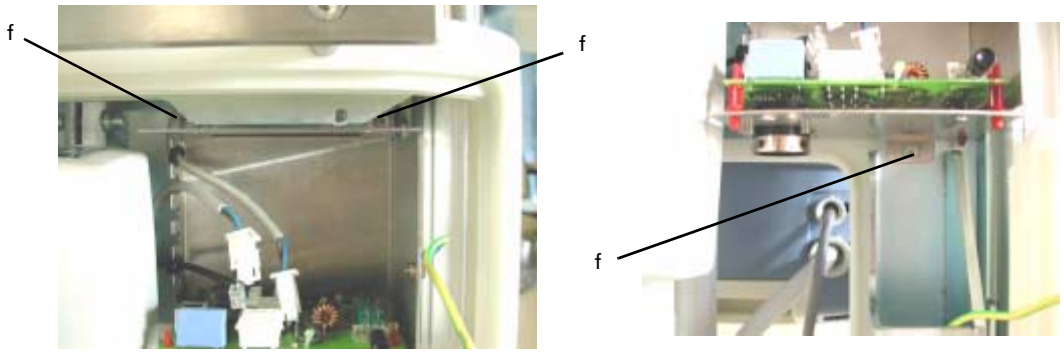

Fig.309 Electronic unit of trolley

11. Remove screws and washers (g) from aggregate connection.

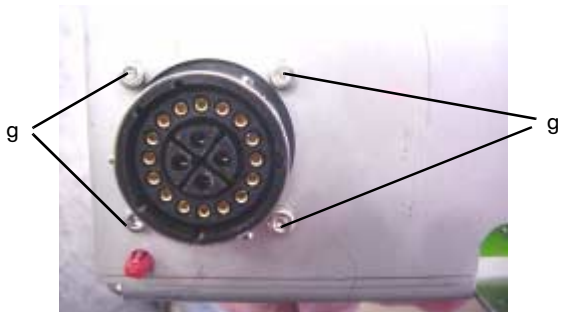

Fig. 310 Aggregate connection

12. Compress plastic pins using pliers and, at the same time, push plastic pins back into electronic unit of trolley.

Fig. 311 View of the electronic unit of the trolley (dismounted)

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13. Remove faulty WT2 Mains PCB from electronic unit of trolley, remove plastic pins, and mount plastic pins onto new WT2 Mains PCB (pay attention to preferred fitting position).
14. Dispose of faulty WT2 Mains PCB according to local waste disposal regulations.
15. Mount new WT2 Mains PCB into electronic unit of trolley by pushing plastic pins into electronic unit of trolley until they engage.

Fig. 312 Electronic unit of trolley

16. Secure aggregate connector using screws and washers (h).

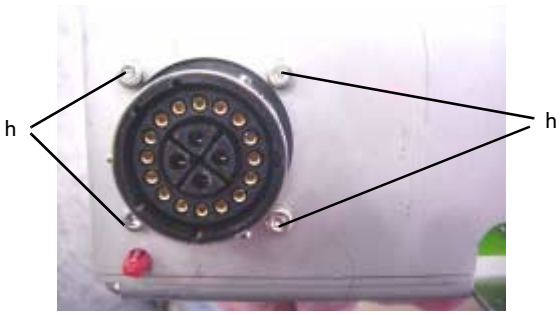

Fig. 313 Aggregate connection

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17. Secure electronic unit of trolley to trolley using screws and washers (i).

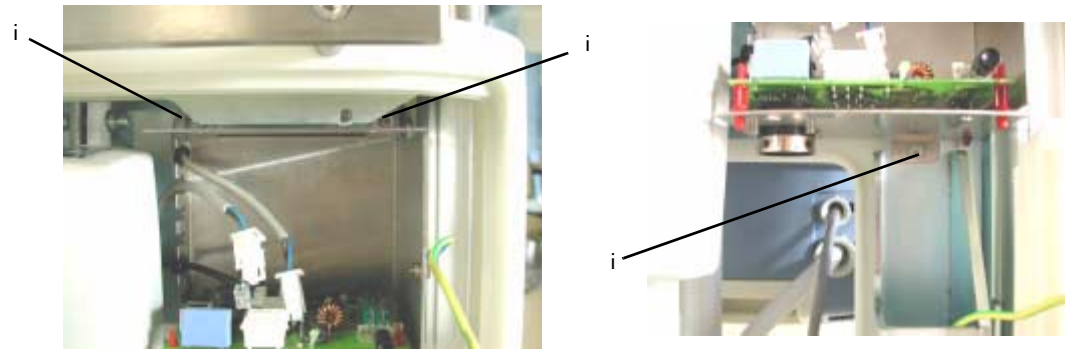

Fig. 314 Electronic unit of trolley

18. Take front cover, and plug cable connector of ground (k) into Mains PCB.
19. Plug cable connector of trolley ground (l) into front cover.

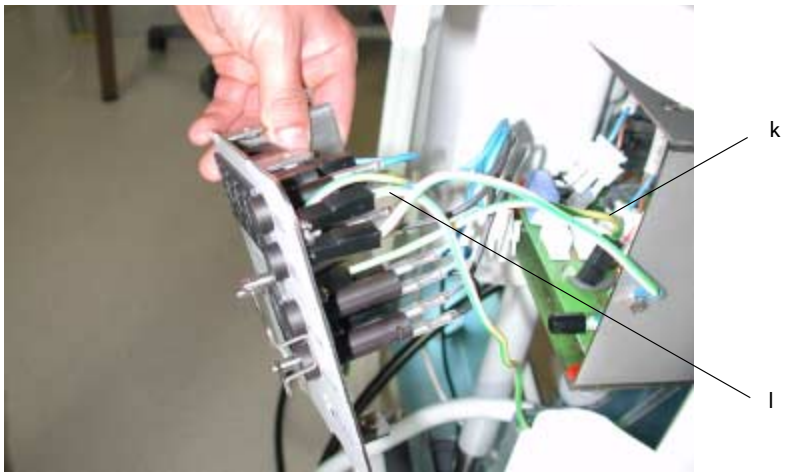

Fig. 315 Front cover

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20. Push cable and cable inlet sleeves into recesses of electronic unit of trolley and plug connectors of cables onto plug-in sockets on WT2 Mains PCB.

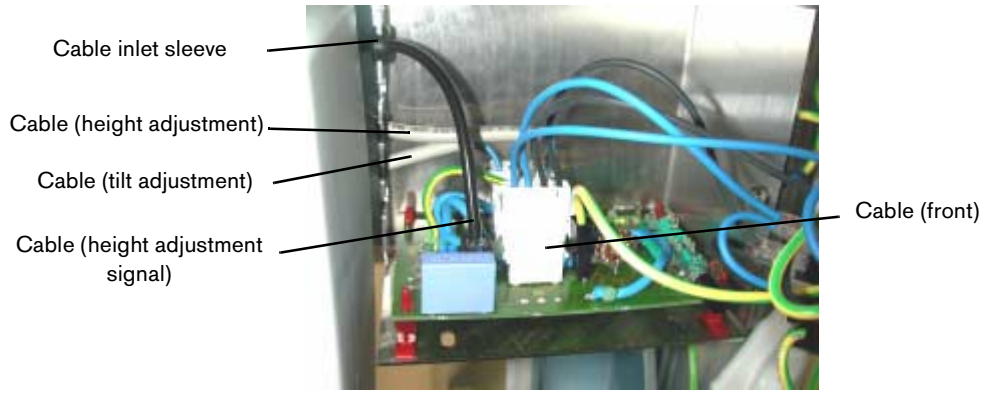
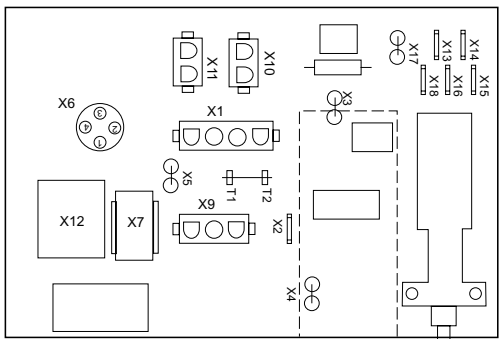


Fig. 316 WT2 Mains PCB



X10 = height adjustment connection
X11 = tilt adjustment connection
X7 = connection (height adjustment signal)
X 1 = front connection

Fig. 317 WT2 Mains PCB

21. Secure front cover to electronic unit of trolley using screws and washers (m).

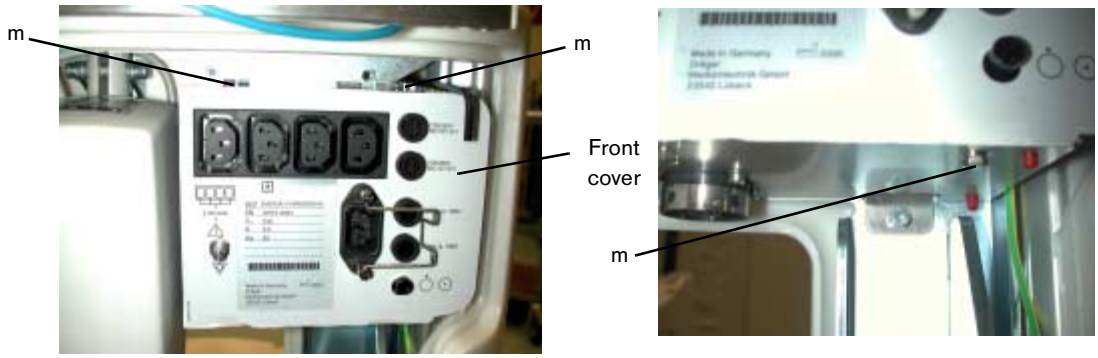


Fig. 318 Electronic unit of trolley

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22. Mount housing of trolley, see section "7.2".
23. Check that pins of connector are not bent or damaged, and screw connector clockwise into electronic unit until connector engages **(Note: Carefully straighten bent pins using, for example, pointed pliers.)**.

Fig. 319 Connector

24. Plug power plug of Caleo into mains socket.
25. Switch on Caleo at ON/OFF switch.
26. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
27. Switch off Caleo at ON/OFF switch.

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7.3.2 Mains voltage fuses

Replace faulty mains voltage fuses with new mains voltage fuses of the same rating.

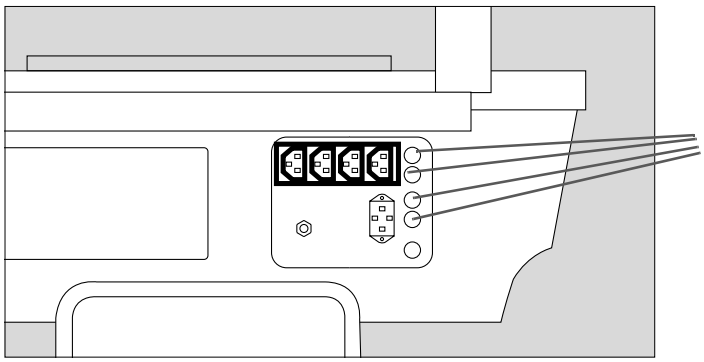

Fig.320 Side view of Caleo

Checking the mains voltage fuses

1. Switch off Caleo at ON/OFF switch.
2. Pull power plug of Caleo out of mains socket.
3. The mains voltage fuse is located inside a bayonet cap. To unscrew the mains voltage fuse use a suitable screwdriver to push in the bayonet cap a little and turn approx. 45° counter-clockwise.
4. Pull mains voltage fuse out of bayonet cap and measure its ohmic resistance using a multimeter.

The ohmic resistance should be approx. 0 ohm.

If ohmic resistance is higher, replace mains voltage fuse as follows:

5. Put new mains voltage fuse of the same rating into bayonet cap, push bayonet cap a little into mains fuse compartment using a suitable screwdriver, and turn approx. 45° clockwise.
6. Plug power plug of Caleo into mains socket.
7. Switch on Caleo at ON/OFF switch.
8. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
9. Switch off Caleo at ON/OFF switch.

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7.4 Replacing the slide blocks of the bearing block

1. Remove basic housing and aggregate housing from trolley, see 6.3.
2. Remove faulty slide block.
3. Dispose of faulty slide block according to local waste disposal regulations.

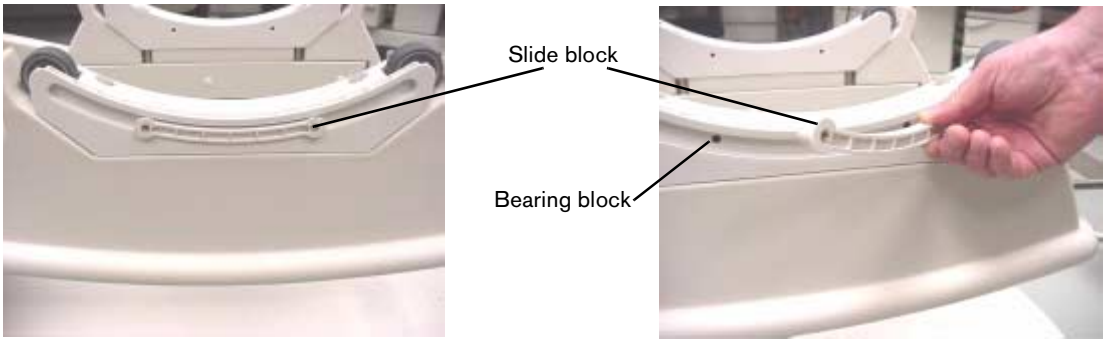

Fig.321 Slide block of bearing block

4. Fit new slide block into bearing block.
5. Mount basic housing and aggregate housing onto trolley, see 6.4.
6. Plug power plug of Caleo into mains socket.
7. Switch on Caleo at ON/OFF switch.
8. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
9. Switch off Caleo at ON/OFF switch.

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7.5 Replacing rolls of bearing block

1. Remove basic housing and aggregate housing from trolley, see 6.3.
2. Remove faulty roll.
3. Remove shaft from faulty roll and fit into new roll.
4. Dispose of faulty roll according to local waste disposal regulations.

Fig.322 Roll of bearing block

5. Fit new roll into bearing block.
6. Mount basic housing and aggregate housing onto trolley, see 6.4.
7. Plug power plug of Caleo into mains socket.
8. Switch on Caleo at ON/OFF switch.
9. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
10. Switch off Caleo at ON/OFF switch.

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7.6 Replacing trolley castor

1. Remove basic housing and aggregate housing from trolley, see 6.3.
2. Cover floor with a woolen blanket or similar.
3. Place trolley on one side.
4. Remove faulty trolley castor, for example, using hammer and screwdriver, see the following Figure.
5. Dispose of faulty trolley castor according to local waste disposal regulations.
6. Slide old plastic washer off shaft and dispose of according to local waste disposal regulations.

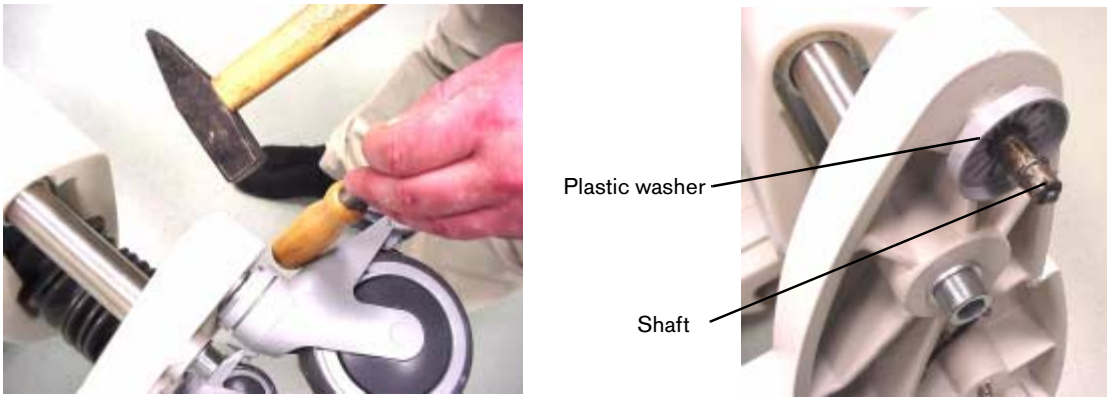

Fig.323 Trolley castor

7. Slide new plastic washer onto shaft of trolley castor (pay attention to preferred fitting position), see Fig. 323.
8. Press new trolley castor onto shaft until it engages audibly.
9. Put trolley up.
10. Mount basic housing and aggregate housing onto trolley, see 6.4.
11. Plug power plug of Caleo into mains socket.
12. Switch on Caleo at ON/OFF switch.
13. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
14. Switch off Caleo at ON/OFF switch.

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7.7 Replacing the shaft of the trolley castor

1. Remove basic housing and aggregate housing from trolley, see 6.3.
2. Cover floor with a woolen blanket or similar.
3. Place trolley on one side.
4. Remove trolley castor, see Fig. 324.
5. Slide plastic washer off shaft.

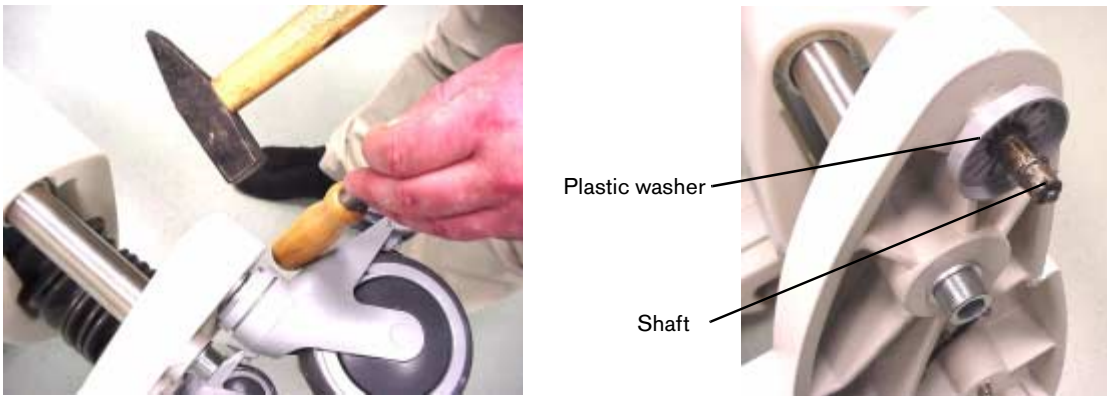

Fig.324 Trolley castor

6. Unscrew faulty shaft and washer from trolley using wrench, see Fig. 325.
7. Slide washer of faulty shaft onto new shaft.
8. Dispose of faulty shaft according to local waste disposal regulations.

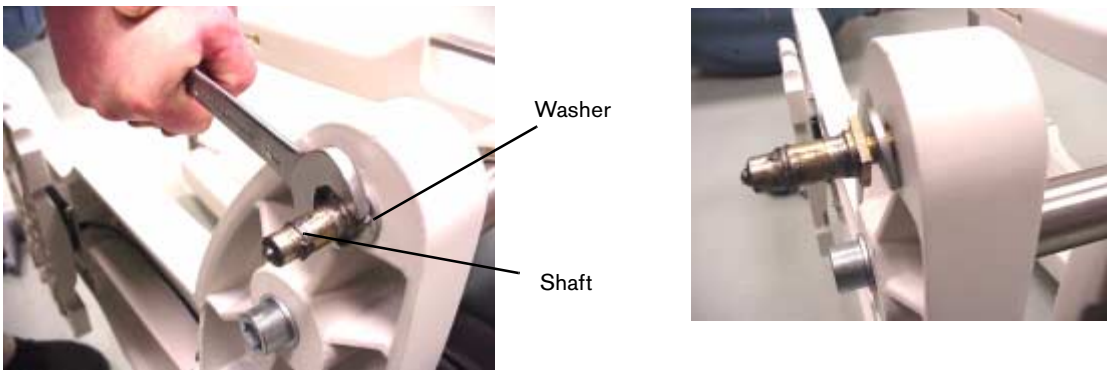

Fig.325 Shaft and washer

9. Screw new shaft and washer onto trolley using torque wrench (79 10 132) and 18 mm open-end wrench bit ((79 10 134) (Note: The tightening torque of the shaft is 70 Nm).
10. Slide plastic washer onto shaft of trolley castor (Note: Pay attention to predominant direction of plastic washer, see Fig. 324.).

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11. Press trolley castor onto new shaft.
12. Put trolley up.
13. Mount basic housing and aggregate housing onto trolley, see 6.4.
14. Plug power plug of Caleo into mains socket.
15. Switch on Caleo at ON/OFF switch.
16. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
17. Switch off Caleo at ON/OFF switch.

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7.8 Pedal (optional)

General information about the pedals

In case of repair, replace complete pedal.

If height cannot be adjusted it may be due to the following errors:

- 24 VDC fuse is faulty (fuse is located on WT2 Actuator PCB in display housing)
- WT2 Actuator PCB
- Motor of height adjustment
- Pedal

Replacing the pedal

1. Remove canopy of Caleo and put aside.

1. Remove basic housing and aggregate housing from trolley, see 6.3.
2. Cover floor with a woolen blanket or similar.
3. Place trolley on one side.
4. Remove screws and washers (a).

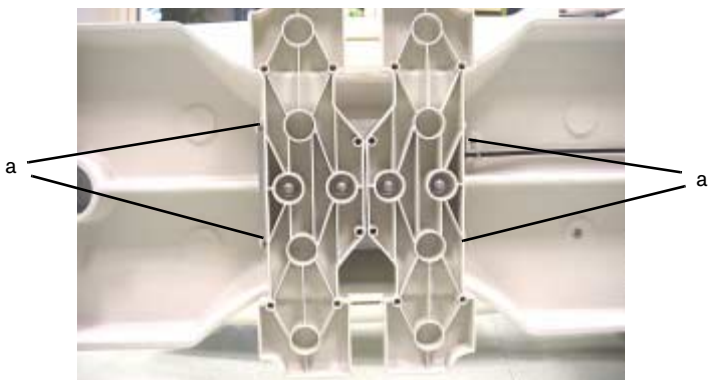

Fig.326 Pedal

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5. Carefully push both cable connector latches away from cable connector and, at the same time, remove cable connector of trolley.

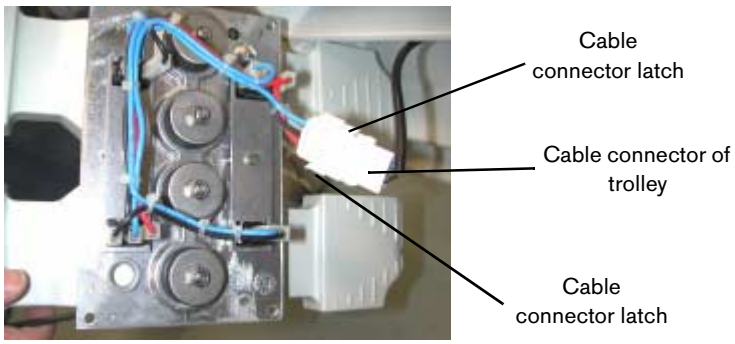

Fig.327 View of the pedal plate

6. Dispose of faulty pedal plate according to local waste disposal regulations.
7. Connect connector of new pedal plate to cable connector of trolley.
8. Secure pedal plate using screws and washers (b) (Note: The tightening torque of the nuts is 6.5 +0.5 Nm!).

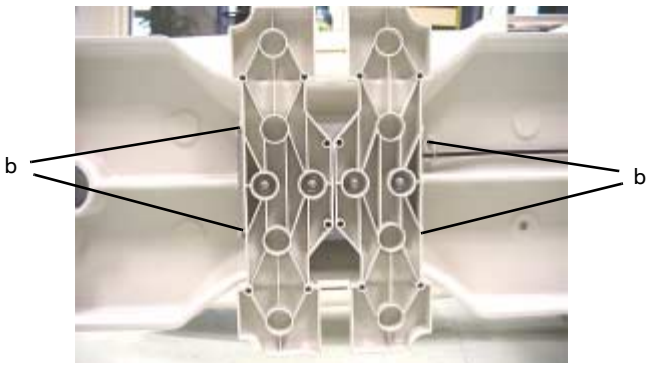

Fig.328 Pedal plate

9. Put trolley up.
10. Mount basic housing and aggregate housing onto trolley, see 6.4.
11. Plug power plug of Caleo into mains socket.
12. Switch on Caleo at ON/OFF switch.
13. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
14. Switch off Caleo at ON/OFF switch.

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7.9 Bellows (optional)

7.9.1 Replacing the bellows

1. Move Caleo into the highest position.
2. Remove basic housing and aggregate housing from trolley, see 6.3.
3. Remove housing of trolley, see section "7.1".
4. Cover floor with a woolen blanket or similar.
5. Place trolley on one side.
6. Remove nuts and washers (a).
7. Remove nuts and washers (b).
8. Remove nut and washer (c).
9. Push grounding cable back into the trolley.

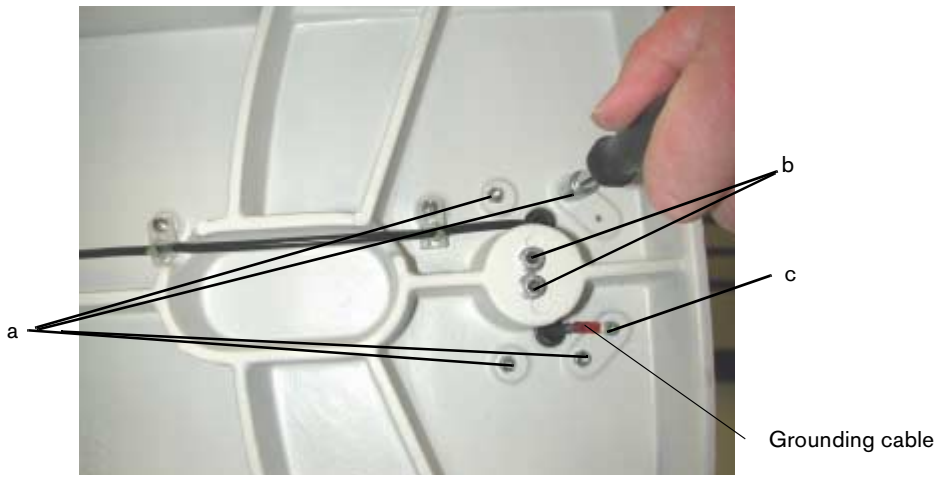

Fig.329 Bottom view of the trolley

10. Put trolley up.

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11. Remove nuts and washers (d).
12. Cut both cable ties and dispose of according to local waste disposal regulations.

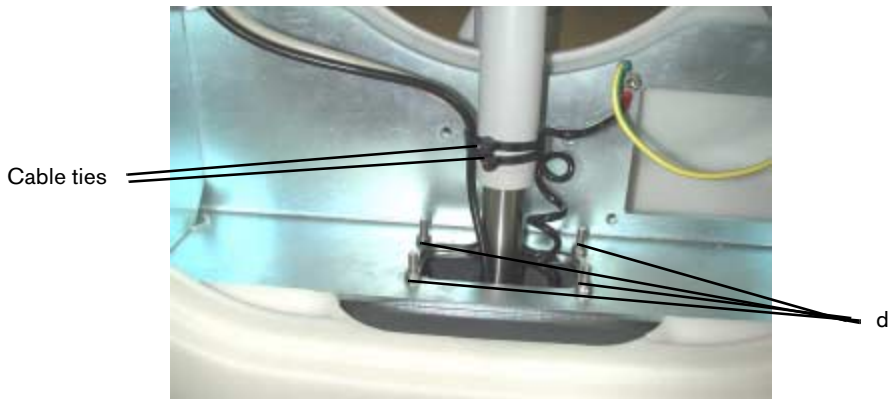

Fig.330 View of trolley (open)

13. Cut cable ties and dispose of according to local waste disposal regulations.

Fig.331 Cable tie

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14. Remove screws and washers (e) and carefully pull front cover slightly to the front.

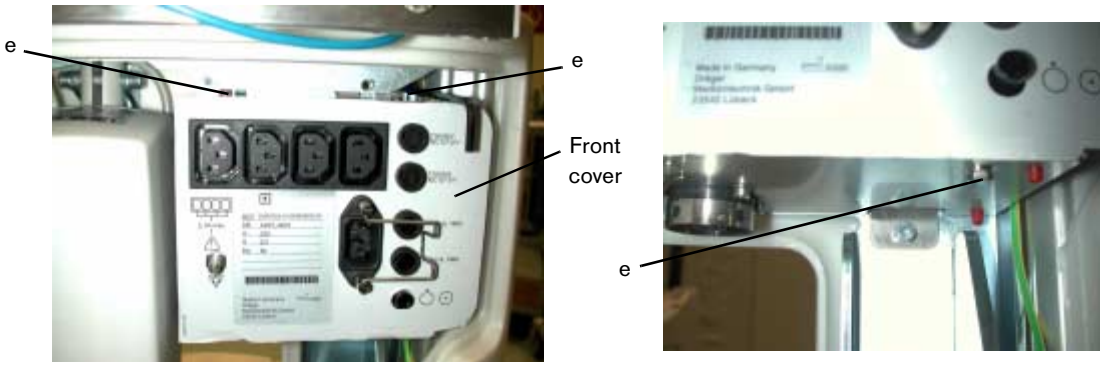

Fig.332 Electronic unit of trolley

15. Disconnect cable connector from plug-in socket on WT2 Mains PCB.
16. Push cable and rubber sleeve out of recess on electronic unit of trolley.

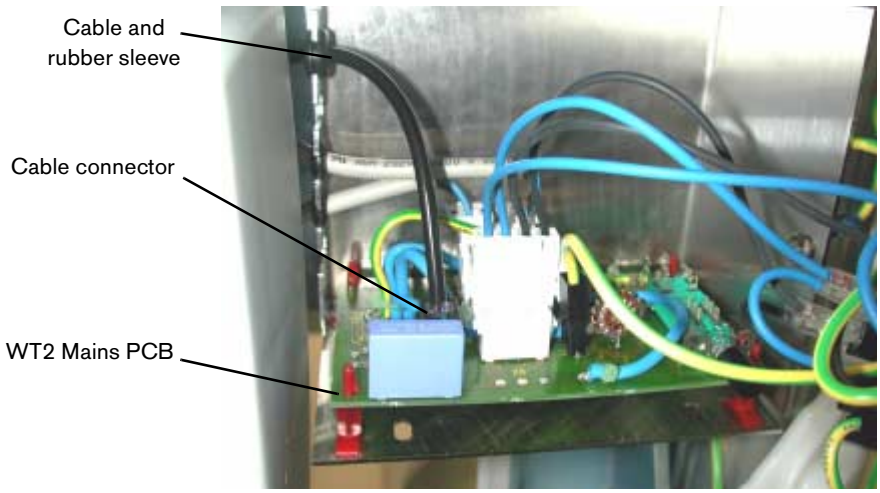

Fig.333 WT2 Mains PCB

17. Push disconnected cable back through trolley.
18. Insert hand through faulty bellows , slightly lift plunger of height adjustment motor, and pull faulty bellows out of trolley.
19. Disconnect both mounting plates from the faulty bellows, and connect mounting plates to new bellows paying attention to the correct fitting position.
20. Dispose of faulty bellows according to local waste disposal regulations.
21. Slightly lift plunger of height adjustment motor and position new bellows around plunger.

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22. Secure bellows using nuts and washers (f) (Note: The tightening torque of the nuts is 1.5 +0.5 Nm!).
23. Attach cables with cable ties.
24. Cut off any protruding length of cable ties and dispose of according to local waste disposal regulations.

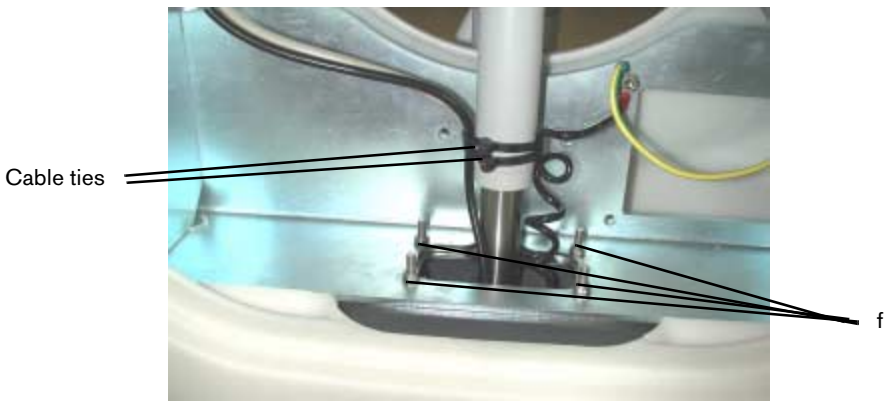

Fig.334 View of trolley (open)

25. Attach both cables using a cable tie.
26. Cut off any protruding length of cable tie and dispose of according to local waste disposal regulations.

Fig.335 Cable tie

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27. Push grounding cable through cable inlet.
28. Place trolley on one side.
29. Secure grounding cable using screw and washer (g).
30. Secure plunger (of height adjustment motor) using nuts and screws (h).
31. Secure bellows using nuts and washers (i) (Note: The tightening torque of the nuts is 1.5 +0.5 Nm!).

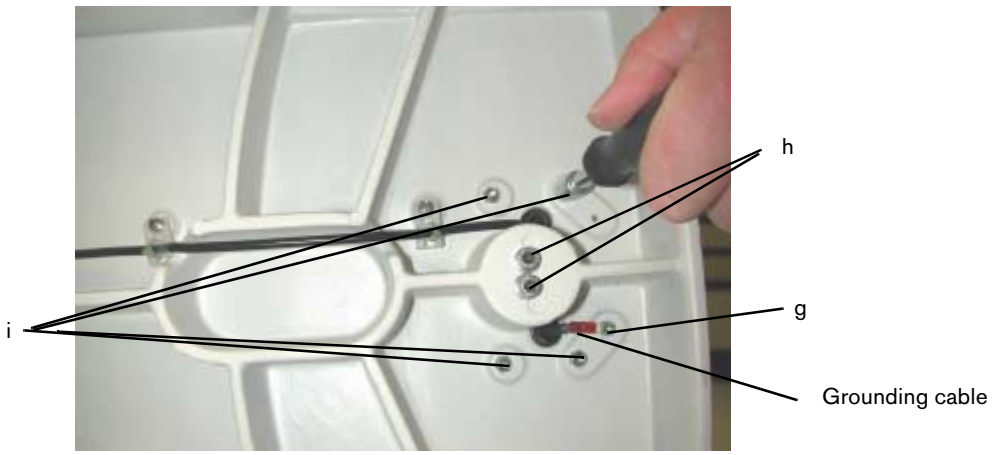

Fig.336 Bottom view of the trolley

32. Put trolley up.
33. Push rubber sleeve into recess on electronic unit of trolley.
34. Plug cable connector into plug-in socket of WT2 Mains PCB.

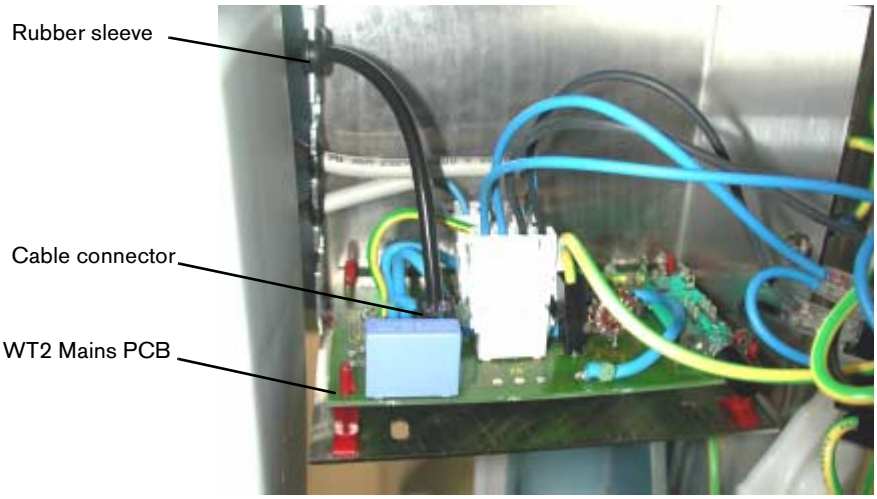

Fig.337 WT2 Mains PCB

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35. Secure front cover to electronic unit of trolley using screws and washers (k).

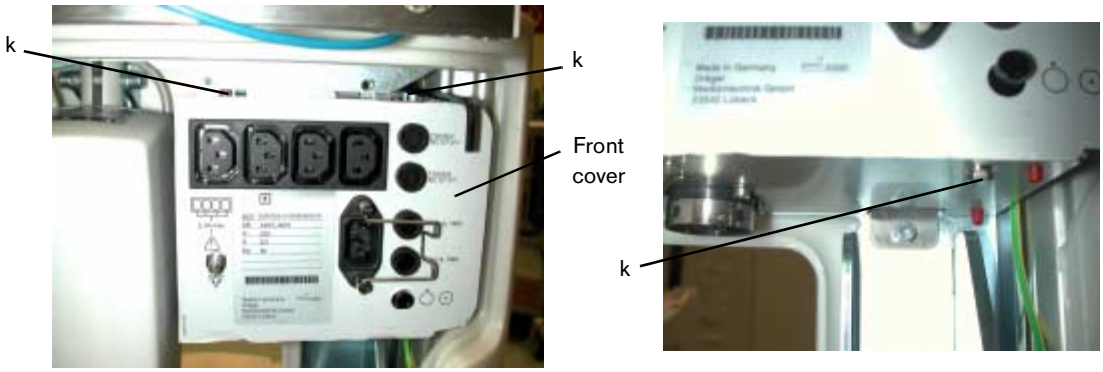

Fig.338 Electronic unit of trolley

36. Mount housing of trolley, see section "7.2".
37. Mount aggregate housing onto basic housing, see section "5.3".
38. Plug power plug of Caleo into mains socket.
39. Switch on Caleo at ON/OFF switch.
40. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
41. Switch off Caleo at ON/OFF switch.

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7.10 Motor (tilt adjustment)

In case of repair, replace complete motor for tilt adjustment.

7.10.1 Replacing motor (tilt adjustment)

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Move optional electrical height adjustment to highest position.
4. Tilt mattress tray to the left.

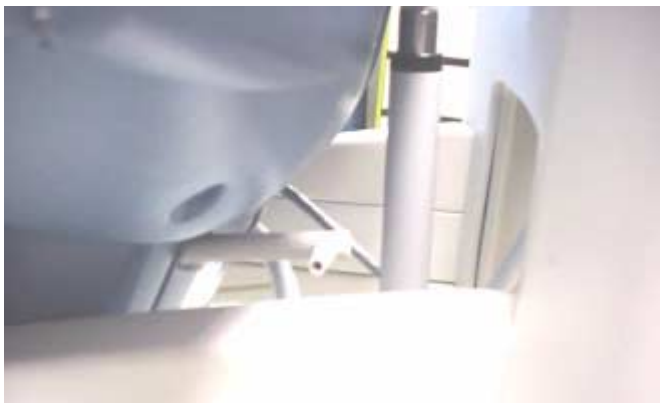

Fig.339 Mattress tray tilted

5. Switch off Caleo at ON/OFF switch.
6. Pull power plug of Caleo out of mains socket.
7. Turn water connecting pipe 90° upwards and pull out of Caleo.

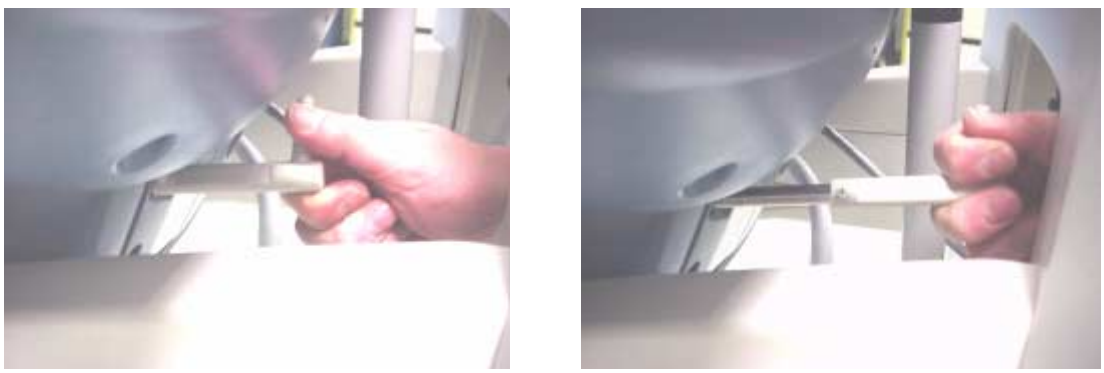

Fig.340 Water connecting pipe

8. Dismount the housing of the trolley, see section "7.1".

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9. Remove screws and washers (a) and carefully pull front cover of electronic unit of trolley to the front.

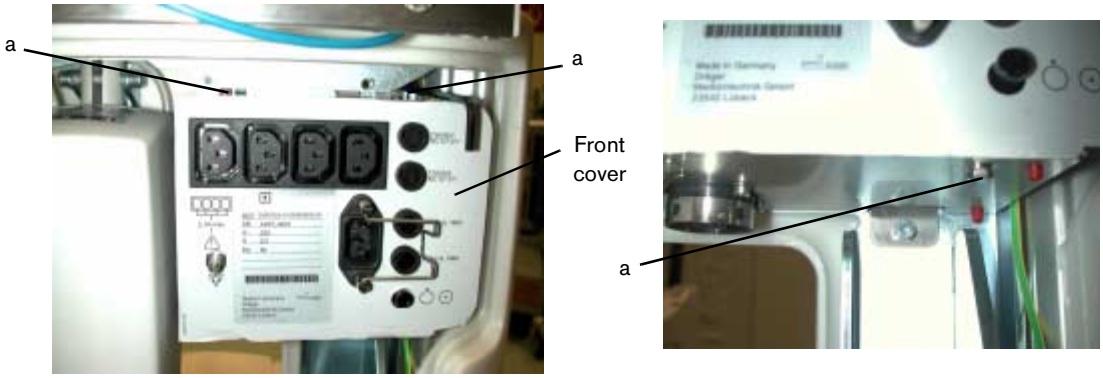

Fig. 341 Electronic unit of trolley

10. Disconnect cable connector (motor of tilt adjustment) from plug-in socket on WT2 Mains PCB.
11. Push cable (motor of tilt adjustment) and rubber sleeve out of side panel of electronic unit of trolley.

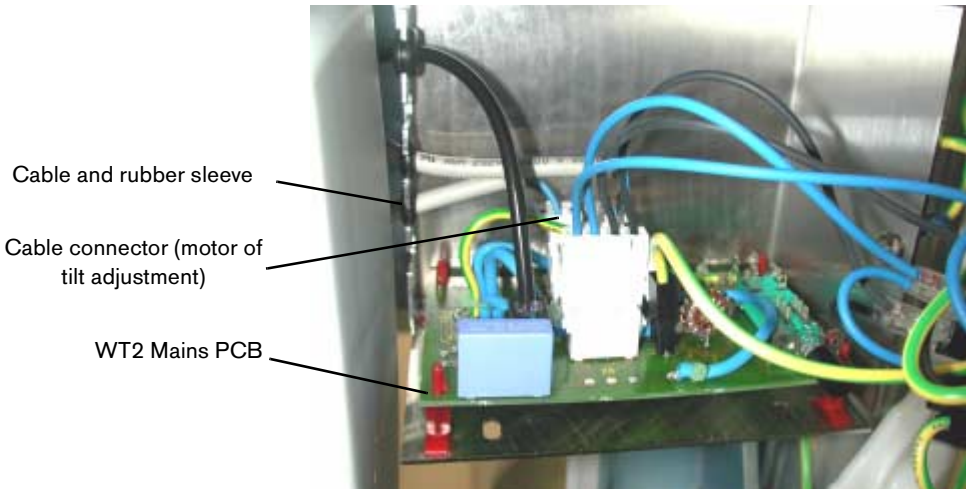

Fig. 342 WT2 Mains PCB

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12. Cut the cable tie and dispose of according to local waste disposal regulations.

Fig.343 Cable tie

13. Remove spring washer from shaft.

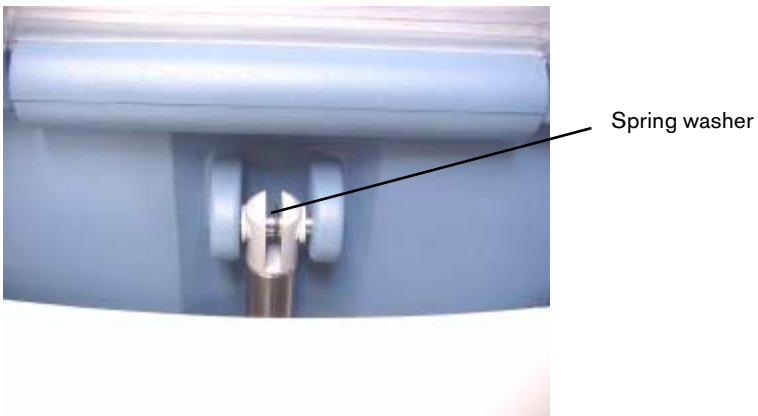

Fig.344 Side view of Caleo (shaft of mattress tray tilt adjustment)

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14. Carefully knock out shaft of mattress tray tilt adjustment, by using, e.g., a hammer and a hex socket screwdriver.

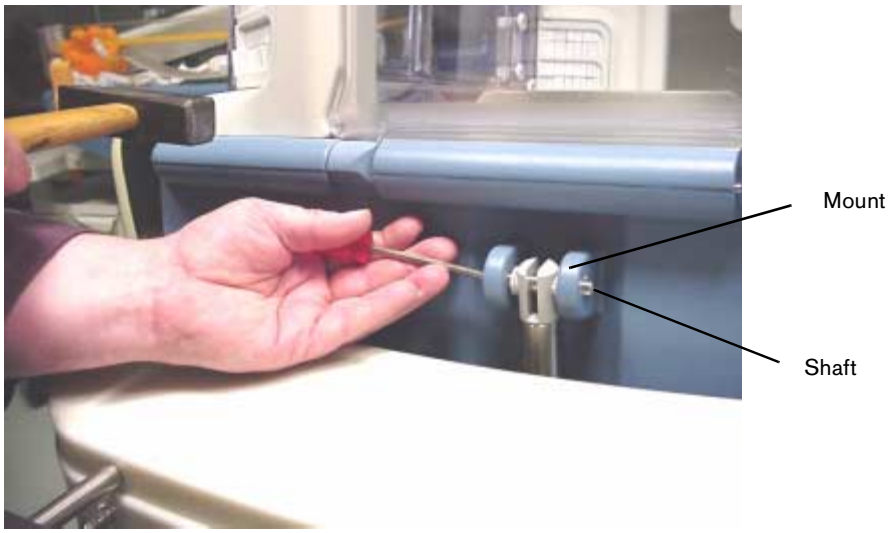

Fig.345 Side view of Caleo (shaft of motor of tilt adjustment)

15. Remove screws (b), see Fig. 346.
16. Remove shaft and mount it onto new motor of tilt adjustment.
17. Pull faulty motor of tilt adjustment and cable out of trolley and dispose of faulty motor of tilt adjustment according to local waste disposal regulations.

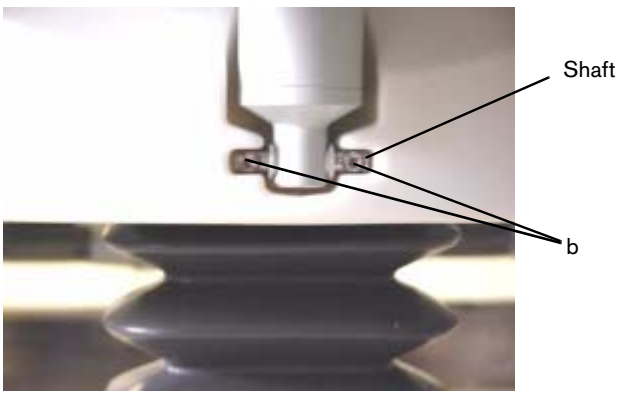

Fig.346 Removing the motor of the tilt adjustment

18. Mount new motor of tilt adjustment using screws (b), see Fig. 346.

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19. Attach both cables using a cable tie.
20. Cut off any protruding length of cable tie and dispose of according to local waste disposal regulations.

Fig.347 Cable tie

21. Push rubber sleeve of cable (motor of tilt adjustment) into side panel of electronic unit of trolley.
22. Plug cable connector (motor of tilt adjustment) onto WT2 Mains PCB.

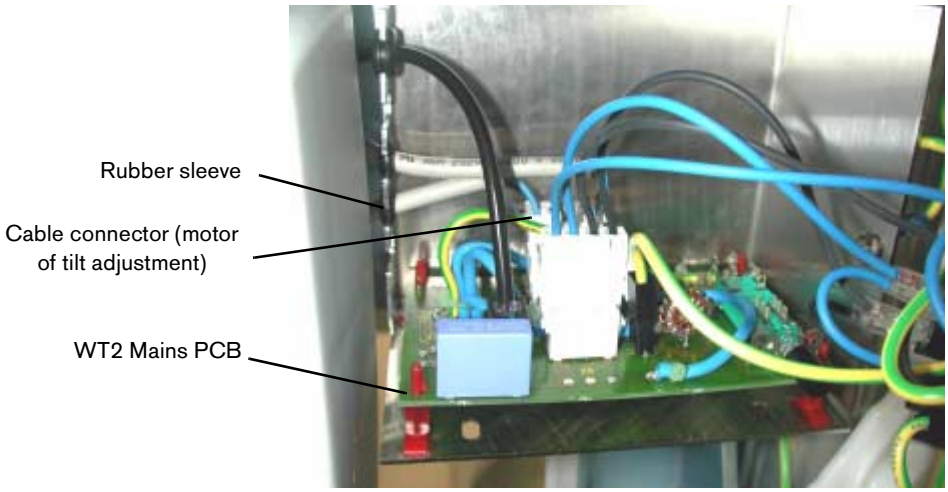

Fig.348 Connecting the cable connector

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23. Secure front cover to electronic unit of trolley using screws and washers (c).

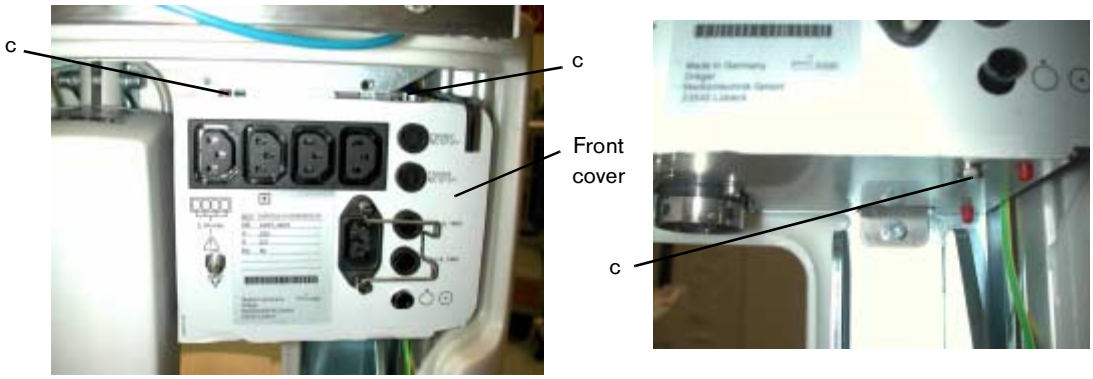

Fig.349 Electronic unit of trolley

24. Mount housing of trolley, see section "7.2".
25. Place plunger of motor of tilt adjustment onto mount of mattress tray and carefully drive shaft into mount using, for example, a hammer and a hex socket screwdriver.

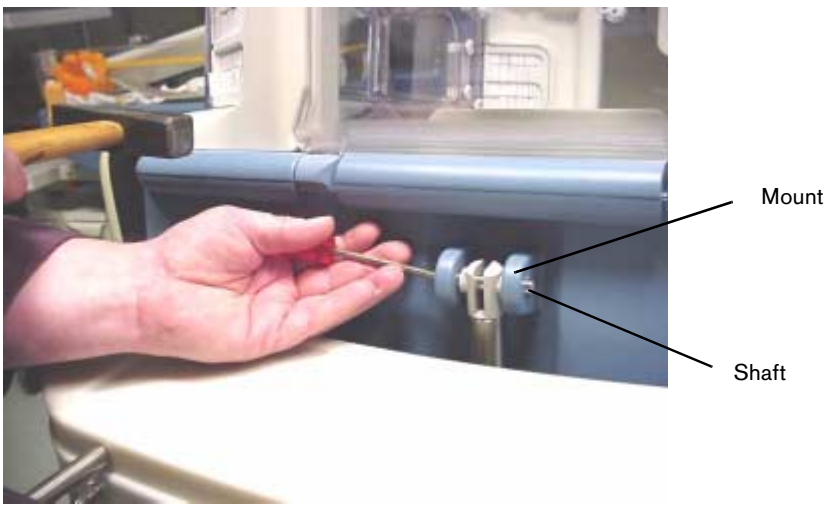

Fig.350 Side view of Caleo, mounting the shaft

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26. Mount spring washer onto shaft using pliers.

Fig. 351 Side view of Caleo, mounting the spring washer

27. Plug power plug of Caleo into mains socket.
28. Switch on Caleo at ON/OFF switch.
29. Check Caleo using Test Certificate, see section "Electrical safety" and section "Functional tests", test item "Mattress tray tilt adjustment".
30. Switch off Caleo at ON/OFF switch.

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7.11 Motor of height adjustment (optional)

In case of repair, replace complete motor of height adjustment.

7.11.1 Replacing motor of height adjustment

1. Plug power plug of Caleo into mains socket.
2. Switch on Caleo at ON/OFF switch.
3. Move electrical height-adjustable trolley to highest position.
4. Move mattress tray to central position.
5. Switch off Caleo at ON/OFF switch.
6. Pull power plug of Caleo out of mains socket.
7. Turn water connecting pipe 90° upwards and pull out of Caleo.

Fig.352 Dismounting the water connecting pipe

8. Switch off Caleo at ON/OFF switch.
9. Pull power plug of Caleo out of mains socket.
10. Remove basic housing and aggregate housing from trolley, see section 6.3.
11. Dismount the housing of the trolley, see section "7.1".

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12. Remove screws and washers (a).
13. Pull front out a little.

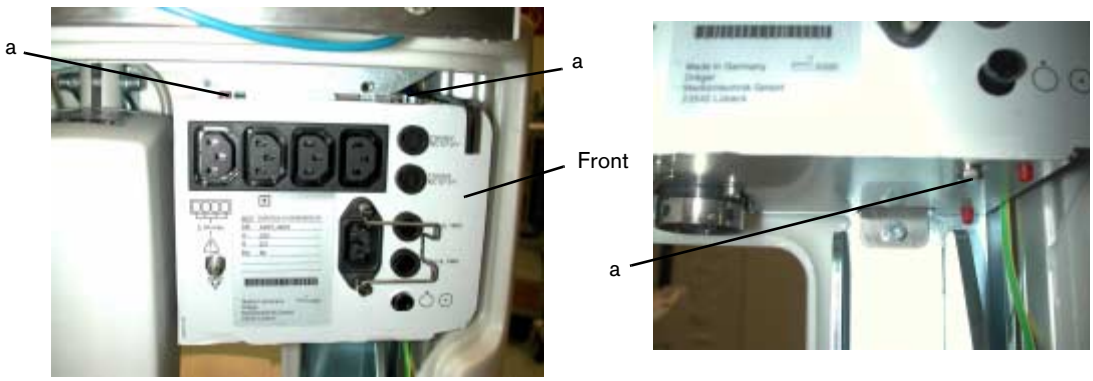

Fig.353 Electronic unit of trolley

14. Disconnect cable connector (motor of height adjustment) from WT2 Mains PCB.
15. Push cable and rubber sleeve out of housing of electronic unit of trolley.

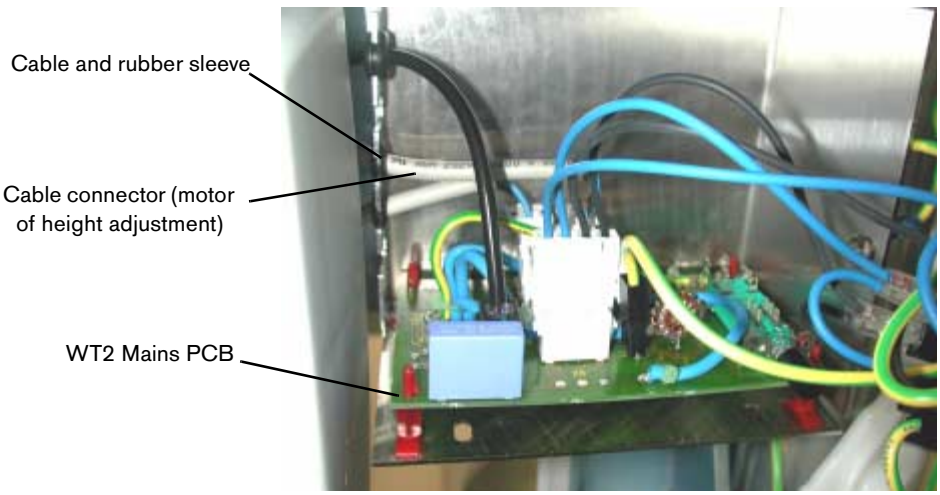

Fig.354 WT2 Mains PCB

16. Cover floor with a woolen blanket or similar.
17. Place trolley on woolen blanket.

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18. Remove screws and washers (b).

Fig.355 View of trolley (placed on one side)

19. Put trolley up.
20. Remove nut and washer (c).
21. Pull screw and washer (d) out of mount.

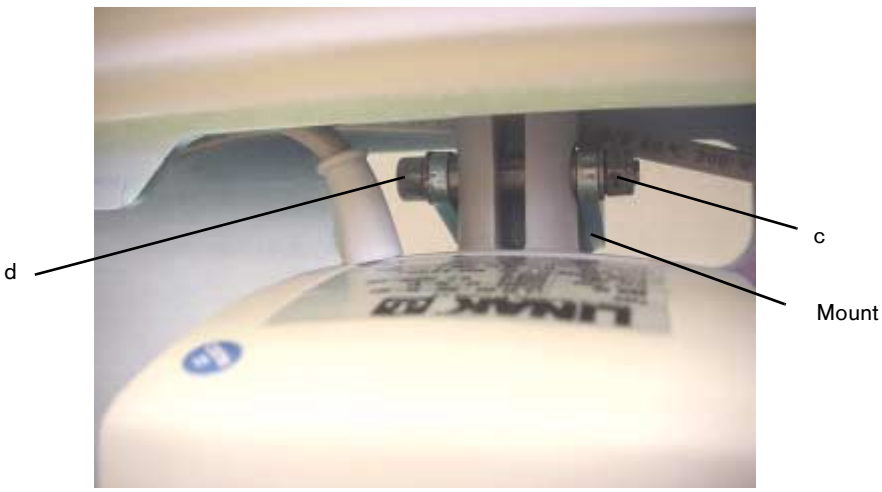

Fig.356 Upper attachment of height adjustment

22. Remove faulty motor of height adjustment and dispose of according to local waste disposal regulations.

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23. Mount new motor of height adjustment using screw, washers, and nut, see Fig. 356.
24. Place trolley on one side.
25. Mount plunger of motor of height adjustment using screws and washers (e).

Fig.357 Bottom view of trolley, mounting the plunger of the motor of height adjustment

26. Put trolley up.
27. Push cable (motor of height adjustment) and rubber sleeve into recess of electronic unit of trolley.
28. Plug cable connector onto plug-in socket of WT2 Mains PCB.

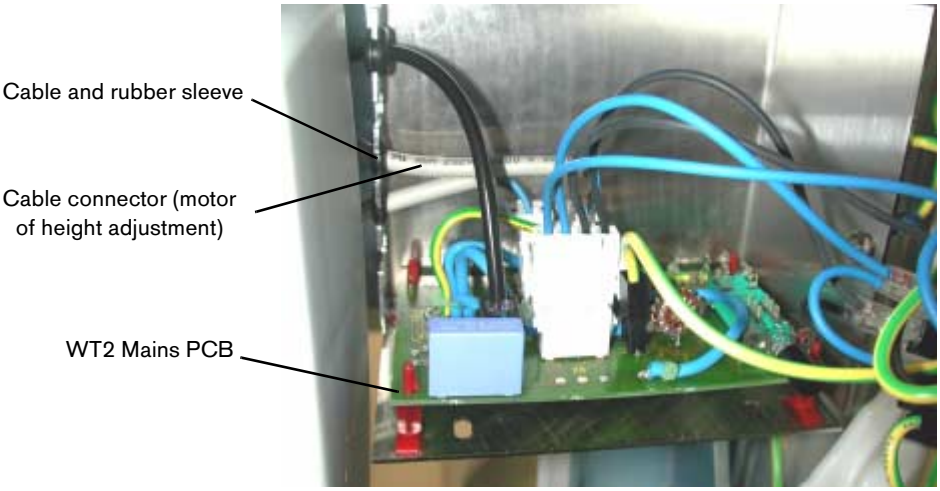

Fig.358 WT2 Mains PCB

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29. Secure front to electronic unit of trolley using screws and washers (f).

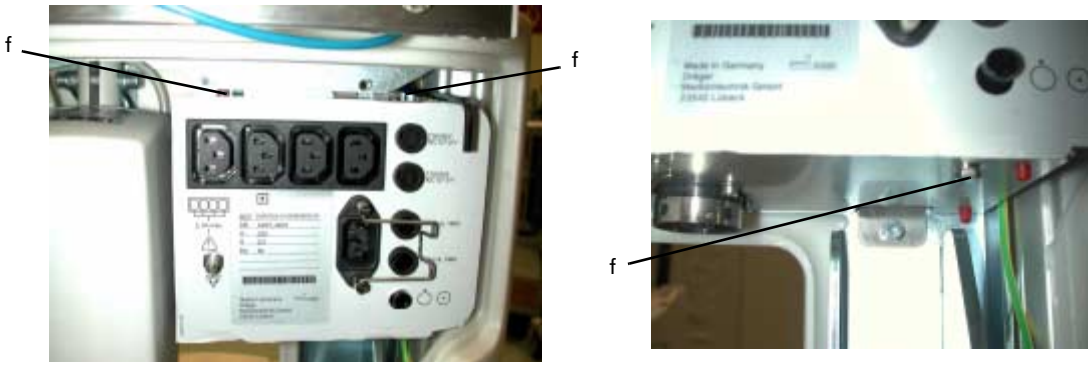

Fig.359 Electronic unit of trolley

30. Mount the housing of the trolley, see section "7.2".
31. Mount basic housing and aggregate housing onto trolley, see section 6.4.
32. Plug power plug of Caleo into mains socket.
33. Switch on Caleo at ON/OFF switch.
34. Check Caleo using Test Certificate, see sections "Electrical safety" and "Functional tests".
35. Switch off Caleo at ON/OFF switch.

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8 Swivel drawer (optional)

8.1 General information about the swivel drawer

The swivel drawer is located on the main control side. The swivel drawer is secured to the bottom cover of the trolley with the swivel drawer mount.

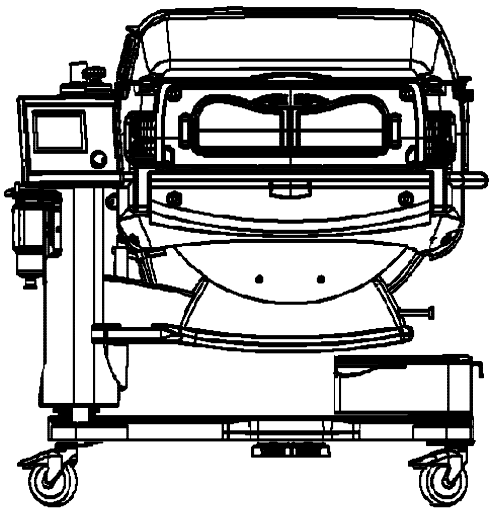

Fig.360 Front view of the Caleo

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8.2 Mounting the swivel drawer

1. Push the swivel drawer and swivel drawer mount onto the bottom cover of the trolley until the boreholes of the swivel drawer mount and the fixing domes of the bottom cover are aligned.
2. Secure the swivel drawer mount to the bottom cover using the enclosed screws. The tightening torque of the screws is 23 ±2 Nm.

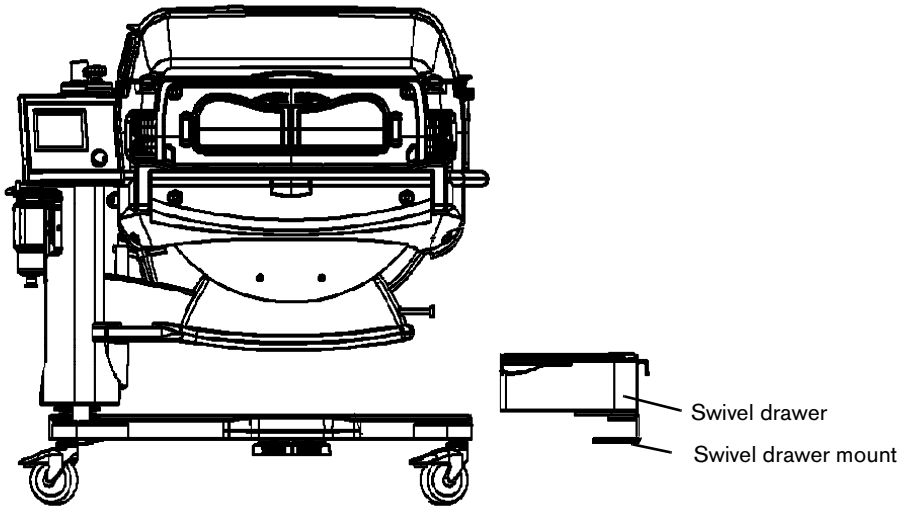

Fig.361 Bottom view of the trolley

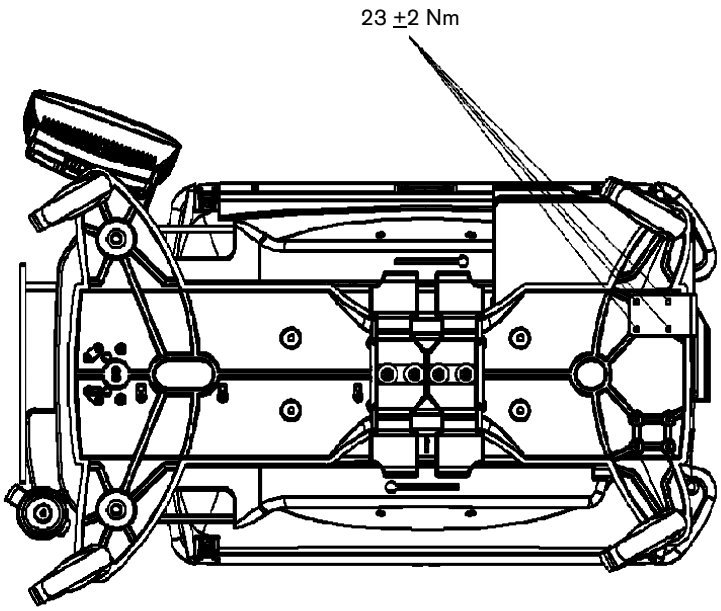

Fig.362 Bottom view of the trolley

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